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THE NERVOUS AND MENTAL PHENOMENA AND SEQUELÆ OF INFLUENZA.

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All practitioners have been struck by the prominence of nervous and mental phenomena in influenza; and much has been written, but mainly in a desultory way, about the symptoms of the disease which are referable to the nervous system, and its more or less persistent nervous and mental sequelæ. The part played by the nervous system in the etiology and history of the disease has been variously interpreted. One holds that it is a "nervous disease," without explanation; another describes it as a pneumogastric neurosis; another as a neuropathy due to ptomaine poison. According to Blocq, cited by Church[1], the primary infectious action takes place upon the nervous system during the disorder, while sequelæ are to be attributed to secondary infection from ptomaines. Cheston Morris,[2] of Philadelphia, advances the theory that the general symptoms of influenza may be traced to a derangement of function, or partial paralysis of the pneumogastric nerve, and that the affection is brought about by conditions of the atmosphere, which particularly tax the cardio-pulmonary apparatus which is regulated by this nerve, a view which, after all, relegates the disease to an atmospheric or infectious cause. Graves long ago referred the bronchial and pulmonary symptoms of grippe to lesions of the nervous power of the lungs, and Blakiston regarded it as a disorder of the nervous system, with concomitant derangement of the organs of digestion, circulation, etc. Levick,[3] who cites the last two authorities, holds that certain symptoms are produced when the poison is expended on the sensorium, and certain others when its influence is chiefly exerted on the respiratory centres.

The analogies or relationships between influenza and other diseases generally recognized as belonging to the nervous system, either primarily or because of the situation of their most notable lesions, have been strongly brought out by able writers, as by Levick, for example, who has even suggested that epidemic cerebro-spinal fever, or cerebro-spinal meningitis, may be simply a malignant form of influenza, a view to which he was led because of the resemblance in the symptoms of the two diseases which differ in degree rather than in nature, and also because for three centuries the two have occurred coincidently or in close sequence.

Grasset and Rauzier,[4] in a monograph on the grippe of 1889–90, lay great stress on the enormous predominance of the nervous over the catarrhal elements in the epidemic, as evidenced in the high fever, great cephalalgia, the marked delirium, the widespread pain, and the excessive nervous irritability. They refer to cases communicated by M. Coustan, in which the entire symptomatology of the disease seems to have reduced itself to a horrible migraine. They review the literature which shows that writers of various countries are unanimous in proclaiming the importance of the nervous element—referring to Austrian, Russian, Belgian, German, English and Polish contributions.

According to Schmitz,[5] who read a paper on the subject before the Psychiatric Society, at Bonn, influenza is a disease of the nervous system with secondary involvement of the heart, lungs, and digestive organs. In several hundred cases which he observed the nervous symptoms were always primary, followed in every case by secondary involvement of the other organs.

What seems to be needed is an analysis and practical grouping of the facts, almost too numerous to handle, which shows the important part played by the nervous system in the development, progress, and results of the disease. How is the nervous system affected by influenza? What are its primary or direct effects on the nervous system, and what are some of the more persistent and permanent impairments, and how are these determined by the disease? What are its acute nervous and mental phenomena, and what are the most common sequences? What is the probable pathology of these states, and what treatment is best in view of the neurotic characteristics of the affection?

The briefest consideration of the subject brings forcibly to mind the fact that all diseases of infectious or toxic origin—epidemic, endemic, sporadic, or accidental—may strike any or all parts of the nervous system with a result which will be proportionate: first, to the virulence of the infecting agent; and, second, to the resistance of the individual, whether this is due to constitutional predisposition or to reductions, the result of previous injury or disease. The microbes may differ, but a bond of union and close resemblance can be recognized between the effects on the nervous system of all contagious and infectious diseases, as variola, scarlatina, diphtheria, measles, whooping-cough, typhoid or typhus fever, leprosy, mumps, cholera, erysipelas, puerperal fever, influenza, or cerebro-spinal meningitis; of all such constitutional and diathetic affections, as tuberculosis, gout, rheumatism, and diabetes; and of all such toxic agents artificially introduced into the system, as alco-

[1] Church: Chicago Medical Record, 1891.
[2] Morris: American Lancet, March, 1891.
[3] Levick: Am. Jour. Med. Sci., January, 1864, and republication in pamphlet form, with notes of the influenza of 1889–90.
[4] Grasset and Rauzier: Le on sur la Grippe de l'Hiver, 1889–90; Montpellier and Paris, 1890; Monograph of 98 pages.
[5] Schmitz: Allgemeine Zeitschrift für Psychiatrie und psychisch-gerichtliche Medizin, 179, 1891. Cited in American Review of Insanity and Nervous Disease, December, 1891.

hol, mercury, lead, arsenic, copper, and poisonous gases. These diseases, these diatheses, and these poisonous metals and gases produce, or may produce, nervous and mental phenomena of the same character, differing in degree in particular cases and for special reasons.

In all these affections at the time of acute onset, if the illness is of a serious character, such symptoms are present as great mental and nervous debility, irritability, restlessness, sleeplessness, or the opposite states of torpor, stupor, hebetude, or coma; delirium; vertigo or syncope; headache, browache, napeache, backache, and limbache; pains of all degrees of severity referred to various nerve areas; hyperæsthesis of the skin, of muscle-masses, or confined to nerve-trunks or branches; spasms, local or general, and with or without unconsciousness; sometimes mental disturbance amounting to a true mania or melancholia. During the progress of such affections any one or several of these enumerated symptoms may be present. Supraorbital pain, for example, may be the only prominent nervous symptom in a case of influenza; headache and backache in diphtheria; hyperæsthesia in mumps, diabetes, or gout; and mania in a case of puerperal infection. Any infectious or toxic disease may, in brief, produce the same symptom, syndrome, or train of phenomena; and—which is the main point—for the same reason, namely, because of the introduction into the system of an agent which directly and powerfully poisons nerve centres, and possibly also nervous conducting tissues.

Following all infectious, diathetic, or toxic diseases, moreover, or directly springing from them, common experience teaches that we may have great nervous or general weakness; forms of insanity of the depressive type; paresis and paralysis of every grade from an affection of a single muscle to that of all the extremities, and even more; localized spasm or cramp; general convulsions; pains in nerves, muscles, and joints; and losses or perversions of sensation.

These symptoms and conditions, which may occur at the onset, during, or after the subsidence of any infectious or toxic disease, are those which constitute the nervous features of the prevailing epidemic. I have introduced the subject in this way because it seems to me that it is this comprehensive grouping of generically similar phenomena which enables us to most readily grasp a subject even for practical purposes. We differentiate phenomena in our daily labor, which we can only understand by properly grouping them and referring them to a common or to related causes.

Any attempt to classify the nervous and mental phenomena of influenza must be attended with great difficulties. These are, in the first place, symptoms and conditions which, although manifested in non-nervous organs, are directly traceable to a nervous origin; secondly, affections which would be recognized by all as properly referred to the nervous system; and, thirdly, affections occurring in nervous tissues and organs, although strictly speaking, not nervous diseases.

I will refer very briefly to the first of these classes, although of much importance. I will not, however, discuss the nervous origin of the fever of influenza, nor will I attempt to explain the catarrh, indigestion, etc., on some neurotic theory, as such a method might lead us anywhere, and for our present purposes would be unprofitable. I wish simply to emphasize the fact that some of the most prominent pulmonary, cardiac, and vascular affections of influenza can best be explained on neural theories. Many personal observations have led me to the conclusion, not new, which has recently been well presented by Elliott,[6] of New Orleans, that the pneumonias of influenza are often due to vasomotor paralysis, that they are, in fact, forms of blood stasis or passive congestion from vasomotor paralysis, which in its turn is dependent upon the action of the infection upon the pneumogastric centres and the nervous system in general. A distinct difference can be made out between the true pneumonic lung and this "grip-lung," as it has been termed by Elliott. Graves long ago attributed the œdema of the lungs which occurs in influenza to an affection of the vagus.

"The grip-lung," according to Elliott, "has a long and very varying condition of passive blood stasis unaccompanied by râles. If resolution occurs within three or four days, it is accompanied by large mucous râles, and no time is given for the slow appearance of bronchial breathing or bronchophony; but during the long continuance of the blood stasis, an exudation occurs, increasing slowly, which will give in time, some bronchophony and bronchial breathing, but never so complete as in pneumonia. Resolution never occurs in these cases with the suddenness that characterizes it in acute pneumonia. The condition passes off as gradually as it formed. The sharp, clear-cut, and sudden phases of the pneumonic attack separate it clearly from the obscure, irregular and slow phases of the *grip-lung*."

Many disorders in various parts of the body are best explained on this theory of local vasomotor paralysis, although it is not necessary to attempt to force this explanation for all. Hæmorrhages, minute, or even of considerable size, occurring in diverse localities, as in the retina, membrana tympani, and internal auditory apparatus, or in the skin, or mucous or serous membranes anywhere, may be due to deficient vasomotor tonus. Brain, kidneys, liver, or pelvic organs may suffer from forms of passive hyperæmia, sub-acute or chronic, which are, in fact, due to forms of vasomotor palsy. Occasionally we meet with cases of vasomotor disorders of the extremities, such as flushed or pallid fingers.

Even trophic affections have occasionally been observed. Wilson,[7] for example, refers to gangrene of the lungs as one of the less common complications. Abscesses of the limbs have been recorded. Grasset records two observations of eschars occurring in young subjects in the absence of prolonged decubitus. The greater tendency in surgical cases to suppuration may have its best explanation in the depression of healthful vasomotor and trophic influence.

The peculiar forms of pulse, and the uncertain or perverted action of the heart, extending in some cases to cardiac palsy and death, are in a strict sense nervous phenomena due to paralysis, partial or complete, of the inhibitory apparatus of the heart.

Let me take up those symptoms and affections which would clearly be recognized as belonging to the nervous system.

I believe, with Church, "that the infection of influenza has a marked action upon the nervous system

[6] Elliott: The Climatologist, vol. i, No. 1, August, 1891.
[7] Wilson: American System of Practical Medicine, vol. i, p. 870.

which may give rise to immediate acute manifestations or to remote and persistent conditions; and that in the predisposed, grippe is competent to cause marked excitement or great depression of the motor, censory, and mental nervous apparatus."

Great nervous and mental prostration, both as an acute manifestation and as a persisting sequel, has engaged the attention and required the treatment of all practitioners. The mental depression often present as an initial symptom has been, in some cases, simply overpowering. Some of the patients are affected like individuals whose mental and motor centres have been poisoned to the limits of human endurance, while still permitting the retention of consciousness. In other cases even consciousness itself has been overwhelmed.

Not a few patients who suffered from attacks of influenza during the early period of the present epidemic are still victims of profound neurasthenia. I refer now to cases which are not distinctively of the melancholic type. These neurasthenics are unable to endure a fair amount of work; their nervous forces are soon routed; they are weak, worrisome and unrecuperative. The cardiac weakness which has been left is undoubtedly in part the cause of this neurasthenia, and with reference to this, Church says that "the persisting neurasthenic condition, which so usually follows influenza, is attributed by some to cardiac weakness of nervous origin, and this contention is not without weight, if it is observed that even after appetite, sleep, body-weight, and physical functions have been long restored, the slightest exertion immediately produces disproportionate fatigue accompanied almost invariably by either a retarded or more frequently accelerated pulse, and rarely by præcordial distress and even by angina pectoris."

Curtin and Watson,[8] whose experience in influenza has been enormous, say that although general nervous prostration often extended over long periods without any discoverable local cause, it was always worth while to examine the urine with care. "Sometimes a nephritis, sometime a faulty digestion or hepatic inaction seemed to underlie the general condition in latent form. These cases, by enforced rest and attention to local complications, gradually recovered. These cases and nervous cases generally, were very disappointing when sent to the seashore during convalescence."

Among organic nervous diseases which have developed during the influenza or have been left in its wake, are in the order of their frequency, so far as my personal observations have gone, neuritis, meningitis, myelitis, and cerebritis, or various combinations of these inflammatory affections, as, for example, concurrent neuritis and myelitis, meningo-myelitis, or meningo-encephalitis.

Probably no single affection of the nervous system has been so common during and after the grippe, and particularly as a sequel of the disorder, as neuritis. Almost every variety of neuritis as regards location and diffusion have been recorded, and have come under my personal notice. Multiple neuritis, while not common, has not been rare: and I have seen a concurrence of this affection with poliomyelitis in the same case. Isolated neuritis of almost every cranial nerve has been recorded, with such resulting conditions as optic atrophy, loss of smell and of taste, ophthalmoplegias, both internal and external; oculo-motor, facial, and pseudo-bulbar palsies of various types, including true pneumogastric paralysis. Several cases of specially located affections of the sympathetic ganglia or nerves have been recorded. Of the forms of local neuritis most common might be mentioned the supra-orbital, intercostal, sciatic, and plantar.

An interesting case of neuritis with a myxœdemoid condition of the limbs presented herself at the Philadelphia Polyclinic recently. She had a sharp attack of influenza five weeks ago, having been in good health up to that time, except five years since, when she suffered for several weeks with inflammatory rheumatism. On recovering from the influenza, the attack not having been especially marked with nervous symptoms, she was extremely weak in the legs, and was scarcely able to drag herself around. In a few days her feet and legs began to swell and to be painful, and soon became of enormous size and exquisitely tender. She has gradually improved, but still has a condition of firm swelling, which does not pit on pressure, from her knees to her ankles, and also still has great tenderness on squeezing the feet or ankles, or in handling the nerves or muscles of the limbs. She has no cardiac affection.

The articular pain and other so-called rheumatic manifestations so numerous during and after attacks of the grippe, are after all best explained on the theory of infectious neuritis or myositis.

These cases with articular and other pains, and with swelling, recall the endemic or epidemic form of multiple neuritis known as beri-beri, in which the chief phenomena are œdema and paralysis of the limbs, with marked pain, hyperæsthesia and paræsthesia, followed later by anæsthesia, lost knee-jerk, and depressed electrical reactions. Myositis certainly, and probably also periositis, occur as complications or sequences of the influenza, and usually in association with neuritis of some type.

Many of the reports speak of the frequent occurrence of various neuralgias. Doubtless a distinction is seldom made by observers and recorders between neuralgia and neuritis, which are or may be separate affections. Practically these cases should be regarded as neuralgic, in which pain is referred to certain nerve lines or radiations; but in which pain on pressure, and the other phenomena of neuritis, such as anæsthesia, vasomotor, and trophic disorders and even paralysis, are absent. In my own experience the cases which could properly be diagnosticated as neuritis are by far the most common. The distinctively neuralgic pains are probably due to toxæmically depressed or exhausted sensory nerve-roots or centres in the cord and bulb.

Of diseases of the spinal cord proper, occurring as complications or consequences of influenza, the reported cases are not numerous, but they are none the less important. A few cases of myelitis have been put on record by native and foreign observers—one that I recall in which all four extremities were paralyzed. As would be expected, in accordance with the analogies with other infectious and toxic diseases, anterior poliomyelitis is the most common type. I have had several cases of temporary paralysis of one or more limbs, which, owing to the absence of pain and of cerebral symptoms, were apparently spinal in their origin, and probably light forms of inflammation. Concurrent multiple neuritis and poliomyelitis has already been referred to as having been observed by

[8] Curtin and Watson: The Climatologist.

me in one case, in which the neuritis, which was not severe, soon disappeared, but a limited paralysis, evidently spinal in character, was left behind.

Several observers have reported cases of bulbar paralysis, and one striking example of this disease, attributed to the grippe, has come under my own observation, although exactly how far the influenza was responsible it is difficult to say. This patient, a clergyman, had a severe attack of influenza in May, 1890, and during its progress continued to work, and ate but little. In a very short time he noticed he was losing power in his hands, which soon atrophied. In January, 1891, he began to have difficulties of speech, and, briefly stated, the case went on until November, 1891, when he was first seen by me; his symptoms were those of well-marked bulbar paralysis, with progressive muscular atrophy, chiefly involving the upper extremities.

In accordance with analogy, we would expect the occasional occurrence both of nuclear polioencephalitis, and even rarely Strumpell's cortical polioencephalitis. One or two of the few cases of probable polioencephalitis of the latter type have occurred in patients suddenly stricken with fever, loss of appetite, and other symptoms which may have been due to infection.

Priester[9] has reported the case of a man fifty-four years old who was taken with influenza in February, and in the beginning of March was seized with extremely violent headache which resisted all medication, and later the patient became deeply somnolent, remaining in this condition for four weeks; he could be aroused, but was apathetic and soon slept again. Reflexes and temperature were normal; pulse from 40 to 60. The patient had no paralytic symptoms, and slowly improved. His affection, according to the reports of the case, closely resembled Gerber's disease—paralyzing vertigo—although the latter is a disease of the warm weather. Tumor could be excluded by the absence of all focal symptoms a year before the attack. The most probable cause he believed was a pathological process, involving the central gray matter of the third ventricle, which would bring the disease into close relation with polioencephalitis of the nuclear type. Dr. G. J. Kaumheimer, who translated this report for the *Review of Insanity and Nervous Disease*, December, 1891, observed an exactly parallel case which originated in April, and lasted into July before recovery took place.

That meningitis, either cerebral, spinal, or cerebrospinal occurs during the decline of the influenza cannot be doubted in the light of the evidence which has been presented by various observers, and particularly during the epidemic of the last three years. It is, however, a comparatively rare concomitant or complication. Some of the facts adduced as proofs of the existence of meningitis, and some of the cases reported as examples of the disease, are clearly instances of improper interpretation. The intense cephalalgia and rhachialgia; the atrocious pains variously localized in the face, trunk, limb-nerves, muscles or joints; the vigilant delirium, with hallucinations and delusions, sometimes assuming great gravity; the intense vertigo, with or without nausea and vomiting—these and other well-known nervous manifestations which are so prominent in many cases at the initiation of the disease, are not necessarily evidence of meningitis, or even of meningeal hyperæmia. Rather they are due to an overwhelming toxæmia of the nerve centres and of the brain. Severe and terrible in character at first, they frequently pass away almost as rapidly as they came, which would not be the case if they were the evidences of a true meningitis. The enormous prostration which is left behind shows that the centres of nervous energy have been subjected to a depressing agency of great virulence, not that merely enveloping membranes composed mainly of fibrous tissue and blood-vessels have been congested or inflamed. No reason could be given why such congestion or inflammation should leave such results.

The reports of cases terminating fatally because of meningitis, and even the reports, personal or official, of the frequent occurrence of this affection, must be received cautiously, and sometimes incredulously. They are only to be relied on when confirmed by autopsies, or when from observers who are accustomed to closely differentiate the meaning of nervous symptoms, and particularly of pain.

It may also be worth while, at this point, to refer to the somewhat frequent diagnosis of chronic meningitis as one of the sequelæ of the disease. This diagnosis is usually made because of the presence of more or less persistent pain in or on the head. Experience has led me to believe that this pain is usually neuritic rather than meningeal. Even deep-seated intracranial pain does not necessarily indicate meningitis. They may be due to neuritis, just as certainly as a pain in the hand or foot. The fifth nerve has an immense distribution within as well as outside the cranium, largely to the dura mater, but also to other tissues and parts. It is a pathological possibility to have dural neuritis without a pachymeningitis, and this is the true explanation of some pains, both acute and chronic, which are present in other diseases, as well as in influenza.

The form of meningitis most likely to be present in influenza, is inflammation of the pia arachnoid or soft membranes, now often designated lepto-meningitis. From observations, corroborated by autopsies, I know that this affection may exist without pain; while pain of varying degree of severity, and usually intense, is practically invariable in pachymeningitis. Lepto-meningitis, however, is not usually without pain and hyperæsthesia as symptoms, but it may be absent, and its presence or absence will depend upon the location, extent, grade and complications of the meningitis.

While believing that these criticisms upon the sometimes hasty, and the too frequent, diagnosis of meningitis in influenza, and indeed in many other infectious and febrile diseases, are just, and can be sustained, it remains true that a genuine meningitis, sometimes of malignant type, may appear during the progress of or closely following influenza. Some very competent observers have reported cases of this character, and in a very few instances the diagnosis has been confirmed by autopsies. The diagnosis should be made to hinge upon the signs and symptoms which would be satisfying as to the occurrence of meningitis from any cause; not alone on the presence of such phenomena as headache, vertigo and vomiting, but on such more convincing manifestations as optic neuritis, and localized spasms or palsies, either cortical or of cranial nerves.

The fact that meningitis, and even the cerebrospinal form, does occasionally occur in influenza, is

[9] Priester: Wien. med. Woch., No. 27, 1159. In American Review of Insanity and Nervous Disease, December, 1891.

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by no means proof that this disease and epidemic cerebro-spinal fever are identical. It simply emphasizes the point with which I started, viz.: that every infectious or poisonous agent introduced into the economy, may produce the same or similar pathological results in the nervous system. Largely according to the vulnerability, special or general, of certain tissues and organs, will be the preponderance of this or that form of so-called disease—for instance, of neuritis, myelitis, meningitis, cerebritis, or of combinations of these affections. All infectious and toxic diseases give neuritis as the most common acute or chronic inflammatory manifestation, although myelitis, cerebritis and meningitis may occur. Even in cerebro-spinal fever, as I was perhaps the first to point out, multiple neuritis is a common complication; but the infection being virulent and overwhelming, we may not only have meningitis, but even meningo-encephalitis, or meningo-myelitis, with all their malignant phenomena and permanently disastrous results.

Vertigo is another symptom, like pain, often improperly referred to meningeal or cerebral inflammation. It is sometimes due to such disease, but occurring in influenza, it may arise from other causes, as, for instance, from extravasations into the labyrinth, or other portions of the auditory apparatus.

Müller[10] reports the case of a man, 50 years old, who after influenza presented great physical exhaustion. In a few weeks his mind seemed affected and he became somnolent, so that he could be aroused only with difficulty, and would then fall asleep again. In this respect the case was much like the one reported by Priester. Pain upon pressure was present over the vertebræ, the neck was rigid, the pulse was small and irregular, the skin reflexes were diminished, and the tendon reflexes were absent. In two weeks he began to improve. The author believed the case was one of spinal cerebro-spinal meningitis, similar to that seen after infectious diseases.

Without entering into a discussion of their pathology or their peculiarities, I will briefly mention a few other forms of nervous disorder, occurring during, or as apparent sequelæ of, the influenza, examples of which have come under my personal observation. Convulsions have been reported by various observers, and in a few instances the convulsive habit has been established, and the patients have remained up to time of report as cases of epilepsy. I have seen two such cases. Hystero-epilepsy and other grave hysterical phenomena have been initiated, or have recurred in cases in which the symptoms had long been dormant. Of local spasmodic affections I have seen no record, but one case of persistent clonic torticollis, with some pain and tenderness in the spinal accessory distribution, has been in attendance at the Philadelphia clinic. Two cases of facial paralysis, occurring immediately upon the heels of influenza, have come under observation.

Many affections not of, but occurring in, the nervous system, have been reported as complications or sequences of the influenza. These include such affections as apoplexy, due either to hæmorrhage, thrombosis or embolism. One of my Polyclinic patients, a man 37 years old, was attacked with influenza in January, 1890. He was not confined to bed, but suffered severely from headache, cough, and persistent general weakness, and in February he was suddenly paralyzed in the right half of his body, and completely aphasic. Well-marked cardiac murmurs were present, and the grippe in this and similar cases is probably causative by lighting up an old endocardial trouble, or through the blood dyscrasia and general prostration which it leaves.

Various observers have reported cases of monoplegia and hemiplegia, without indicating the pathological character.

Recently, in consultation, I saw a typical hæmorrhagic apoplexy occurring in a case of influenza in a woman about 60 years old, who had previously been in fair health, and was not known to have had any disease of the kidneys or heart, although her vessels were somewhat atheromatous. Dr. S. S. Prentiss,[11] of Washington, has reported three cases of cerebral apoplexy occurring during the progress of the influenza. One was in a man of 57 years of age; another in a man of 87; a third in a woman of 67. One of these was probably hæmorrhagic, the other two, from the histories, were probably from thrombosis. In cases of this character, the infection of the disease acts to bring about an apoplexy, both by the changes which it produces in the blood, by its effects upon cardiac action, and by the general debility induced. Such apoplexies might occur from other depressing causes; they are to be regarded not as phenomena, but as accidents of the epidemic.

Uræmic convulsions in patients suffering from chronic Bright's disease have been precipitated by the influenza, and it has seemed to me to have been active in lighting up lurking syphilitic diseases.

In one case of paretic dementia of somewhat irregular type, seen in consultation, the initial symptoms of the disorder were observed soon after recovery from a severe attack of grippe, the wife and friends of the patient in fact attributing the mental disorder to this attack. The probabilities are that syphilis was present, but latent, prior to the epidemic.

Purulent meningitis and brain abscesses have been somewhat frequently noted in connection with the numerous instances of otitis media.

The relations of influenza to insanity have not received much attention from writers. Mairet,[12] of Montpellier, has recently published a lecture on the subject delivered at his clinic for mental and nervous diseases. Rush, who is referred to by Mairet, speaking of the epidemic which lasted from 1789 to 1791, and particularly of the year 1790, mentions that several persons were stricken with symptoms of insanity, and that one attempted suicide; he also speaks of several having had hallucinations of sight. Bonnet, reporting on the epidemic of 1837, cites one case which was stricken with a furious mania as the result of the grippe; and Petrequin, referring also to the same epidemic, records several patients tormented by melancholy ideas, and states that four or five suicides were accomplished or attempted at the hospitals in Paris.

The following conclusions compress into small compass so much that is valuable with reference to the relation between influenza and the psychoses that I cannot do better than quote them. They are reported as the conclusions arrived at by Dr. Leledy, and were presented to the Medical Society of London by Dr. Savage.[13] 1. Influenza, like other febrile affec-

[10] Müller: Berlin klin. Woch., No. 37, 1890—cited in American Journal of Insanity and Nervous Diseases, December, 1891.

[11] Prentiss: Medical News, August 29, 1891.

[12] Mairet: Grippe et Aliénation Mentale, Montpellier and Paris, 1890.

[13] Savage: Lancet, No. 3558, and Medical News, January 16, 1892.

tions, may establish a psychopathy. 2. Insanity may develop at various periods of the attack. 3. Influenza may induce any form of insanity. 4. No specific symptoms are manifested. 5. The rôle of influenza in the causation of insanity is a variable one. 6. Influenza may be a predisposing or exciting cause. 7. In all cases there is some acquired or inherited predisposition. 8. The insanity is the result of altered brain nutrition, possibly toxic. 9. The onset of the insanity is often sudden, and bears no relation to the severity of the attack of influenza. 10. The curability depends on general rather than on special conditions. 11. The insane are less disposed to influenza than are the sane. 12. In rare instances, influenza has cured psychoses. 13. The insane may have mental remission during the influenza. 14. There is no special indication in treatment. 15. Influenza may lead to crimes and to medico-legal issues.

I can indorse from experience almost every one of these conclusions. With reference to the statement that no specific symptoms are manifested, it should be said that while this in a general sense is true, the most frequent type is a form of melancholia.

The cases of active insanity have been observed at the onset of influenza and during its height, but more particularly during its period of decline and convalescence. The published cases have been recorded chiefly as instances of acute mania or melancholia. The commonest type of grippe mental disorder, as I have just stated, is a form of melancholia or lypemania; but as this not infrequently assumes the form of melancholia agitata, it is often regarded as mania by practitioners not accustomed to differentiate the varieties of insanity. These patients are intensely depressed and emotional; they are filled with apprehensions of disgrace and ruin; they believe that they will never recover their former health; they are suspicious and delusional with reference to those who surround them; they are frequently unwilling to eat, or to rest, or to take medicine; and in some cases they have definite delusions of terrible character, for the most part hypochondriacal or religious. They are frequently plagued with the thought of suicide, and sometimes make successful or unsuccessful suicidal attempts. They have been deprived by the ravages of the disease of mental and moral stamina. In the majority of these cases, but not in all, some hereditary or acquired predisposition is present. While, however, the grippe usually gives us mental disorder of special type—a form of delusional melancholia—under special conditions it may be the starting-point or exciting cause of any variety of mental disorder, as mania, paranoia, paretic dementia, hebephrenia, etc., but I can no more than glance at this phase of the subject.

The investigations of Church show that in each year in Cook County, Illinois, the epidemic of influenza has been attended by an increase in the number of proceedings for the commitment of the insane, which he believes cannot be explained by increase or movement of the population of the county.

Of the influenza occurring in hospitals for the insane, I have had no opportunity for observation except in connection with the insane department of the Philadelphia Hospital. A great disproportion has been observed between the number of cases occurring among the women and the men. One hundred cases are recorded as having occurred among four hundred and sixty female patients; and only three in a large number of men. The disease did not prove particularly disastrous among these patients, only three deaths having occurred from pulmonary complications. The cases were, as a rule, not of severe type; less severe than in an equal number of sane patients.

K. Helwig[14] has recorded the results and action of influenza in the asylum at Aarhus, Denmark, and Pritchard has translated and summarized this paper for the *Review of Insanity and Nervous Diseases*, for December, 1891. The account is of such interest that I will give it in detail: "The disease appeared in the asylum January 4, a few weeks after it had first been observed in the neighborhood. Out of 520 insane forty-one were so severely attacked that they were confined to their beds. The disease seemed decidedly contagious. It spread with difficulty on account of the wards being divided one from another. Eight of the twenty-five wards were spared altogether. When a ward would be invaded, the disease would rapidly run its course to proceed to another. The transmission of the contagion could be distinctly seen in the sick wards where those stricken down in other wards would bring the disease with them and transmit it to patients there. Seven patients had pneumonia. A relatively large percentage (6) died, of which four were from pneumonia. Among these was a man with such a severe cerebral disease that he must be excluded (the post-mortem results in the remaining five, which were women, were all more or less similar). The most essential results were extreme hyperæmia of the cranial bones and membranes, where the dura and the brain mass itself twice presented fresh and strongly vascular pseudo-membranes with small hæmorrhages as well. The veins and arteries of the thinner cerebral membrane were filled to bursting with blood; the large basal arteries were so filled with coagula that they stood out like cords, or those of an injected specimen. The brain substance itself was very hyperæmic, and its consistence increased. The average weight of these brains was about the ordinary of those of Aarhus. The writer also gives the history of the man mentioned, and those of the three other cases where influenza could not be diagnosticated during life, including the post-mortem findings of a case of influenza in a (sane) nurse, who died of pneumonia. Here also was great hyperæmia of the brain and its membranes, yet not so pronounced as in the insane cases. The writer has seen influenza accompanied by severe psychic symptoms. In a few cases, the condition resembled acute delirium, which, however, is transient, and seems easily controlled by antifebrin. On the contrary, in two hopeless cases of insanity the disease had such a favorable and curative action that they may be regarded as cured. In both cases there was pneumonia."

The epidemic influenza has impaired the *morale* of the community. Lack of spirit in work, and an apprehensiveness with reference to health, business, and all matters of personal interest are abnormally prevalent. The hysterical have become more hysteric; the neurasthenical more neurasthenic. Hypochondria has displaced hopefulness in individuals commonly possessed of courage and fortitude. In brief, certain neuropathic and psychopathic features have been impressed upon the community. We cannot afford even to dismiss entirely from consideration

[14] Helwig: Hosp. Tidende, R. 3, Bd. viii., S. 729.

the bearings of the epidemic upon the increase not only of suicides, but of other grave crimes.

Many interesting questions in connection with treatment might be discussed; but as the subject of treatment has been assigned in this discussion to Dr. Hare, I will only speak of one point.

The use in influenza of hynotics, narcotics, sedatives, and motor depressants is a question of particular interest in connection with the study of the nervous and mental phenomena of the disorder. The views of practitioners and writers are here decidedly at variance. Serious mental and nervous complication or actual insanities occurring during influenza have been attributed to the too free use of such chemically powerful remedies, as phenacetin, antipyrin, antifebrin, chloral, bromides, sulfonal, and paraldehyde; and our older narcotics such as opium, hyoscyamus, conium, and cannabis indica, have also come in for a share of blame. Persisting conditions of nervous prostration, and chronic respiratory and cardiac neuroses, have also been charged to drugs. Undoubtedly such criticisms have some foundation, but it remains true that each of the remedies named has proved itself of some value in the treatment of influenza, and particularly of its nervous types. The enormous consumption of a drug like antipyrin is a practical argument both for and against its use. What Grasset has said of this remedy might with almost equal truth be said of almost any of the rest: "This agent," he says, "vaunted by some as a panacea against all manifestations of the disease, is considered by others a remedy absurd and irrational in all cases. The truth would seem to reside between these two extreme opinions."

DENTAL EDUCATION. A FEW SUGGESTIONS AS TO NEEDED IMPROVEMENTS.

Read before the Chicago Dental Club, December 28, 1891.

BY JOHN S. MARSHALL, M.D.,
OF CHICAGO, ILL.

Mr. President and Gentlemen of the Club:

The question which has been chosen as the topic for discussion this evening is, to my mind, one of great interest and of vital importance to the future of dentistry.

The facilities for general education provided by a State or a Nation, indicate the degree of its intelligence and civilization. Education and civilization go hand in hand, while error and superstition are driven into oblivion before the light of truth and knowledge. As there can be no question of greater importance to a State than the education of its people, so there can be no question of graver moment to a profession, than the education of the young men who are to enter its ranks.

This is an age of progression; an age of intense earnestness; an age of high ideals. In every department of life this is made manifest. From the most humble callings to the most exalted of the professions, we recognize an intense desire for improvement. It permeates every avenue of human existence, and influences our physical conditions, our social surroundings and our mental culture.

In educational matters there is the greatest activity. Every department of learning is advancing to higher ground. New methods of teaching are being introduced. Obsolete and cumbersome systems are being discarded, and a disposition is manifested to "prove all things, and hold *fast* that which is good."

"Thus times do shift; each thing his turn does hold;
New things succeed, as former things grow old."

Great universities are also being founded, and those now in existence are enlarging and organizing new departments, for the express purpose of furnishing more extensive facilities for higher and post-graduate education in literature, in the arts and the sciences. In this, the promotors are simply meeting the popular demand for higher learning.

The learned professions—so-called—are demanding higher attainments of those who desire to enter their ranks. This is particularly true of divinity, of law and of medicine.

In all of these departments of learning, the preliminary qualifications for entrance into their schools are being placed upon a higher plane, but in none has greater advancement been made in this respect than in medicine. With all this, however, the number of young men applying for admission to the medical colleges, who have received a collegiate training, is nevertheless increasing every year. In the dental departments of some of our universities, a noticeable improvement has also taken place in this respect. In a few of them, the entrance examinations have been made the same as for medical students, while the number applying for admission who are exempt from entrance examinations by virtue of possessing certificates of higher qualifications, is gradually but surely increasing.

The young men of character are seeking a broader culture and a deeper scientific knowledge, before entering upon their professional studies, and as a result, they are in reality forcing the colleges to raise the standard of preliminary requirements, and to do more thorough and scientific work.

Most of the dental colleges, however, are not doing their duty in this matter; the ambition for large classes and a handsome financial balance at the end of the year prevents them from taking the high position which their privilege to occupy, and they are content to be governed by this lower motive, rather than the l[illegible] of educational advancement.

America [illegible] before been the educational centre of dentistr[illegible] whole civilized world, but it will soon lose [illegible]ge, unless a decided advance is made i[illegible]nt requirements and methods of teachi[illegible] pursued in a majority of our colleges.

Th[illegible]rench and German schools are ambitio[illegible]ers, and unless our institutions take a m[illegible]ed position, they will soon find themselv[illegible]ed and dropping towards the rear in this [illegible]narch of progress. There is already a pere[illegible] falling off in the number of foreign students [illegible]nding the American dental colleges.

Let [illegible] for a moment, review the history of our profes[illegible]n. Sixty years ago, dentistry was nothing more than a trade, and practiced principally by barbers and blacksmiths. It could make no pretense to being a learned profession, for it had no schools, no literature worthy of the name, and no societies. In its ranks could be found only a very few men of learning; but these few, like the little leaven in the barrel of meal, "leavened the whole lump."

To the faith and efforts of those noble men, Bond, Harris, Hayden, Parmlee, Westcott, Maynard, Harwood, Tucker, Keep, we owe our present advantages;

our colleges, our periodical literature, our text-books and our societies. Do we realize what they sacrificed, in time, in money and in health, that we, their professional children, might have all these advantages, and that through them, suffering humanity might be blessed?

Were they living to-day, we feel quite sure they would labor even more earnestly, and make even greater sacrifices than of yore, to keep the profession which they loved so dearly, well in the fore-front of human progress. They would not willingly rest upon the laurels already won, but would press forward and upward; while upon their banner would be inscribed

"The strange device, 'Excelsior.'"

Is it not our duty, then—if we would be worthy such a parentage—to make every effort in our power to still further advance the educational interests of our chosen profession? Could we offer a more beautiful or noble tribute of our appreciation of their sacrifices and labors?

Comparing the status of dentistry of those times with that of to-day, we recognize a very great advancement, but all departments of scientific learning have made progress equally great.

Our system of dental education is still capable of much improvement. Your attention, therefore, is solicited to the consideration of a few of the most important changes that seem to us much needed at the present time, to keep our colleges in the fore-front of educational advancement.

First: The qualifications for admission should be raised to a higher standard.

Nothing less than a high school education should be accepted as a qualification for admission. Most of the dental schools claim to require a grammar school education as a prerequisite to matriculation; but we are all well aware of the fact that this is not insisted upon in very many of the colleges, and young men are graduated every year who have not a sufficient knowledge of their native lang write a grammatical sentence, or correctl any of the words contained in it. This g, and a reproach upon the good name of ntistry.

Some of the better class of th e claim- ed they were not supported in to raise the standard of preliminary re while they were willing to admit the low, they were nevertheless too high stu- dents sent to them. The fault lies partly with the profession, by ing men to attempt the study of subj ey are totally unfitted by reason of th ut this does not exonerate the colleges ts are hampered and handicapped all th l- lege course, and are usually of little ac er professional life.

Let us rather encourage and stimula r as we may, every young man who conten s the study of dentistry, to take a full course of college training in the sciences before taking up professional study. In this way and this way only, can we hope to make dentistry one of the highest of scientific callings.

Second: The course of study in the fundamental sciences of medicine should be broadened and the whole course of instruction more systematically graded.

It should be so arranged that the student will advance, by natural steps, through the entire course. Beginning with the foundation studies of anatomy, histology, chemistry, and physiology, and advancing from these to the study of pathology, materia medica and therapeutics, and finally to the application of remedies and surgical operations for the cure of disease and the restoration of lost parts by mechanical and other means. Little or no attention has been paid to this subject by the majority of the dental colleges and until recently, with few exceptions, a strict division of the students into separate classes has not been attempted, but, all were ground through the entire course of study, juniors and seniors together "in a hit or miss," "go as you please" sort of fashion, that, to say the least, has not been conducive to the best education of the young men committed to their charge. In every other department of learning, except medicine and dentistry, from the primary school to the university, the graded system is the only one in use. Experience has taught that by this system, which is the natural one, the student is not overwhelmed with a heterogeneous mass of knowledge, much of it beyond his comprehension, but, on the other hand, he is led step by step from the simple to the complex, from a study of the normal structure and functions of the human organism to the recognition of disease and its causes and the means to be applied for its prevention and cure.

Third: The substitution of the recitation plan of instruction for the old lecture system would in many departments be of very great advantage to the student.

By following a certain text book and requiring the substance of a given number of pages as a lesson, to be thoroughly learned, and recited each day, the student makes better progress than by listening to lectures and attempting to take notes. This is not simply our own opinion formed from student life and years of professional teaching; but is the conviction of several gentlemen eminently qualified by many years of experience as teachers in professional schools. The teacher, however, should not confine himself at the recitation to the text of the lesson; but he should be given full liberty and expected to explain and elucidate each subject to the best of his ability.

Another advantage to be gained by this method is a closer personal contact between the teacher and the student. This advantage cannot be over-estimated. To do the best work for the individual student, the teacher must know the disposition and capabilities of each member of his class. All cannot be taught by precisely the same methods; some can be led; others must be driven; some need encouragement, others must be held back; but by adapting his teaching to the individual requirements he creates enthusiasm in his work, a knowledge of the subject is gained and thus he accomplishes the desired end.

Fourth: Each class could, with advantage, be divided into small sections for laboratory and clinical instruction.

A competent demonstrator or clinician should be placed in charge of each section; and it should be his duty to guide the hand and the eye of the students in the practical manipulations of the laboratory and operating rooms rather than to do the work himself or leave the student to discover (?) after repeated failure and discouragement, a method of his own. The finest operators in surgery and dentistry can be, and have been made by this individual method of teaching.

Fifth: There is imperative necessity for a longer course of professional study.

The time has recently been extended to three years of college instruction of five months in each year; while a few colleges have extended the yearly sessions to six, seven and even nine months. This is a very gratifying advance, but it falls far short of what is really required. Dentistry in its highest sense is a department of medicine and should be studied as such! To acquire a good knowledge of the fundamental sciences of medicine, and the special manipulative training necessary to make a good dentist, in the time demanded by a majority of the dental colleges is simply an impossibility; only a mere smattering knowledge of the subjects named in the curriculum can by any possibility be attained.

Four years of college instruction of at least nine months in each year, is none too much time to be spent in the acquirement of a good dental education.

The blacksmiths, the carpenters, the brick masons and other skilled trades, require of their apprentices that they serve from three to four years of twelve months in each year before they are considered capable of filling the position of journeymen. And yet nearly all of the medical and dental colleges pretend to educate (?) young men for the duties of a learned profession, and, by virtue of their diplomas, place in their hands the issues of life and death after a course of study extending over less than half the time required to learn one of the ordinary mechanical trades.

"'Tis true, 'tis pity; and pity 'tis, 'tis true."

Sixth: The standard of final examinations should be raised and made more uniform.

We notice a very great diversity in the requirements at the final examinations. Some of the colleges require their students to obtain seventy per cent. (70%) on a general average; others demand only fifty per cent. (50%); while in still others the final examinations are merely a farce, all students being graduated except those who have not paid their fees.

In a few of the colleges the examinations are conducted in writing and orally; in others the written examination only is used, while in still others it is entirely oral.

The final examination is the last barrier between the student and his right to practice. The gate through which he passes should be guarded well and the axe fall upon the incompetent and immoral with unerring certainty.

The student, however, should be given every opportunity to prove his fitness for graduation; hence the examinations should be both written and oral, as by this method any attempt at cheating is discovered and every student is given a fair chance.

The character and the standing of the student only, should govern the action of those who pass upon his qualifications of fitness to practice. It would be far better for the public and profession, however, if the power to grant diplomas was vested in the State rather than in the teaching institutions. Sentiment or greed often enters into the case as it now stands, and many young men are graduated who are totally unfit to enter the ranks of a liberal profession.

Other suggestions might be made looking towards a farther elevation of the standard of dental education, but those already enumerated seem to be the most needed improvements at the present time.

Is this asking too much? Are these changes feasible? To the first we answer "No!" To the latter we say emphatically "Yes!" The colleges that would place themselves in this advanced position, might at first find their classes lessened in numbers, but what would be lost in this respect would be more than made up to them in the quality of their students and in reputation; and after a few years they would find that on the whole they had lost nothing financially and had gained immensely in reputation. An example in proof of this statement could be easily furnished, but we forbear for fear the comparison might be considered invidious.

Had we the gift of prophecy we might suggest; the time is not far distant, yes, some even in this presence may live to see, a much greater advancement in dental education than that just outlined.

We believe a collegiate training in the sciences and a complete medical education will sooner or later be required as a prerequisite to entrance upon special training for the practice of dentistry. Then the dental college will become what it ought to be, a *dental hospital*, devoted entirely to special teaching in this department. We are aware that to some this will seem to be an Utopian idea, but if we read the trend of the times correctly, it will be realized much sooner than we expect, for,

> "Often do the spirits
> Of great events stride on before the events,
> And in to-day already walks tomorrow."

A SKETCH OF MR. LAWSON TAIT AND HIS WORK.

BY FRED BYRON ROBINSON, B.S., M.D.,
OF CHICAGO, ILL.,
PROFESSOR OF GYNECOLOGY IN CHICAGO POST-GRADUATE MEDICAL SCHOOL.

(*Concluded from page 103.*)

Mr. Tait employs a lady superintendent in his hospital who supervises in general and relieves him from its care. His hospital is the outcome of many years of discipline. I am very much impressed with one idea in Mr. Tait, and that is, he avails himself of the value of *paid labor*. He has the capacity to make paid labor serviceable. Though he conducts this hospital with some twenty-five servants under his pay, yet the labor of these servants is made valuable, and he finds much time to do his own special work, contribute valuable articles to journals, make original addresses at great medical gatherings, and do extensive reading. Paid labor relieves him from preparation of patient or instruments. It takes away the anxious care of after-treatment. He keeps a secretary, who does his correspondence with a typewriter. When Mr. Tait wishes to write an article or a letter, he simply talks it off to his secretary, and she takes it down in short-hand and then sends it to him afterward in type-writing for his corrections. This saves much valuable time.

Mr. Tait has performed nearly 2,800 abdominal sections. This is, so far as I know, the largest number done by any one man. He has published some very good views on traumatic hæmatocele, or hæmatocele following operations. They occur from operations on the broad ligament. They often retard recovery. I think I saw about fifteen hæmatoceles during the course; some four of these suppurated. Dr. Martin opened and drained three through the abdominal wall, and Mr. Tait opened one through the vagina. One Dr. Martin aspirated. Many of these

extra-peritoneal hæmatoceles arise after operations, but give no particular disturbance. It would appear they arise in some 12 per cent. of operations.

Mr. Tait's medical assistant for the past two years has been Dr. Christopher Martin. He is a man of 25, of scholarly attainments, and a very courteous and kind gentleman. The University of Edinburgh, where he graduated, showered a goodly number of honors on him. He attends to the after-treatment for Mr. Tait, and is becoming an expert in it. He does considerable minor gynecological work, and not infrequently abdominal section. We would be pleased to see a monograph from Dr. Martin on the after-treatment of abdominal section, as he has given after-treatment to over 400 cases.

Mr. Tait has contributed largely to our knowledge of axial rotation of tumors. Ovarian and other tumors will often twist around on their pedicle until the returning and even the entering stream of blood will be cut off. He remarked at one of his operations of rotated tumor that he had seen sixty-one or sixty-two of those cases. They had all rotated from before backward and to the right except two. The theory is that the emptying and filling of the rectum is the chief cause. If the tumor be on the right side and especially influenced by the ascending colon, it might rotate exactly opposite. After the pedicle of the tumor is strangulated its nourishment must come from its walls. I have seen several of these rotated tumors, but four of the most typical ones I ever saw were with Mr. Tait. One as large at a man's head had been entirely strangulated on its style. When he removed it there was the most beautiful display of new-formed tissue all around its side, between its walls and the abdominal walls. He shelled the tumor out of this delicate new-formed tissue. He has demonstrated that if a woman is known to have a tumor, and it suddenly increases in size in a couple of days or less, it points suspiciously to axial rotation. I saw one of his cases in which the tumor was rotated at labor. The tumor may go on rotating and very gradually strangulate the pedicle. Within the past eight months he diagnosed and successfully removed a strangulated ovarian tumor from a lady over *70 years old*, in Italy.

It was simply prompt surgical action that saved the old lady. I saw the most skilful of surgeons lose a case of rotated tumor by simply putting off the operation until too late.

Mr. Tait gives a gynecological course to four medical men. The course lasts six months, and the fee for this six months' course is one hundred guineas ($525). Only four doctors are allowed in the course at one time, but a pupil can begin his course at any time there is a vacancy. For this course he has more applicants than he can accommodate.

In this course one may learn very much of the capacity of the peritoneum to resist disease and bear manipulation. In short, homely language, one can learn what the belly will stand. Any man who intends to follow abdominal work during life will never regret the time and expense required to pursue a course with Mr. Tait.

In operating, Mr. Tait does not follow the rules of the books very close, but often follows his own peculiar methods. I will illustrate this by a case of supra-pubic cystotomy at which I assisted him. The man was given no preparation. He weighed probably 275 pounds; his pubes were not shaved; his bladder was not filled with water; his rectum was not filled with air or water. Mr. Tait simply cut down to the bladder and then into it, with no sound in it for direction. With forceps he drew out a stone weighing nearly two ounces. He then sewed the edge of the bladder to the abdominal wound and put in a glass drain tube. Both ends of the incision in the abdomen were closed up to the drain tube. The man made a good recovery. He was about 62 years old, and his abdominal walls were between four and five inches thick with fat.

I have never seen Mr. Tait remove the uterus for malignant disease, and I understand he is opposed to the operation. He talks against any particular operation or interference with cervical lacerations, and claims the trouble does not lie in the lacerated cervix, but generally in the endometrium or metrium. In other words, he considers Emmet's operation of but little value.

His internal therapeutics are very limited. Iron, ergot, and the salts of potassium, he employs very much. He has unbounded faith that the salts of potassium, *e.g.*, $KClO_3$, will reduce a uterus suffering from subinvolution: or, as he terms it, "the hospital uterus."

Mr. Tait seems to believe in a distinct relation of insanity to pelvic disease. I have seen him operate in cases of severe mental disturbances at menstrual periods, and though such cases are better, they are too recent to say anything about. His writings show some good results in operative work, and I have heard him relate cases which showed excellent improvements. So far as I could observe, he would not generally operate in such cases, without entrenching himself by the distinct agreement of the attending physician, or such other agreements as were fully satisfactory to the concerned parties, that an operation was imperative.

Mr. Tait is a Fellow of the Royal College of Surgeons of Edinburgh and of England. M.D. was conferred on him by a medical college in New York, by one at Albany and by one at St. Louis. He is an honorary member of so many societies that it would be tedious to mention them. He is professor of gynecology at Queen's College at Birmingham, and President of Mason's College. He was President of the British Gynecological Association in 1886. Several years ago two men were to be knighted in Birmingham. One was Dr. James Sawyer, and the other was Mr. Lawson Tait. The former gentleman accepted the honor, and is now Sir James Sawyer. But Mr. Tait refused the honor of knighthood, and the world knows him by the simple, untitled, but well recognized name of Lawson Tait, around which he has built more enduring monuments for mankind than all the titles monarchs could confer.

Mr Tait was awarded the Cullen Triennial Prize by the unanimous vote of the College of Physicians and of the College of Surgeons of Edinburgh. This was awarded for the progress he made in work on the gall-bladder. The prize consists of a silver bowl, made by a silversmith in London in the seventeenth century. It would hold 4 to 6 quarts. The inside is lined with gold. At present it stands in a glass case in the art gallery of Birmingham. The bowl itself is a beautiful piece of art.

Mr. Tait has always taken an active interest in the public and municipal life of the city of Birmingham. He was for years member of the City Council. He

was member and chairman of the Board of Health for some years. For ten years he was member of the Asylum Committee.

Mr. Tait is a firm believer in Home Rule. He has paid some attention to politics, and in 1886 was a candidate for member of Parliament, but was defeated. His defeat was no doubt due to the fact that his practice employs so much of his time that he has none to spend in other directions. Mr. Tait is a very vigorous man in whatever cause he espouses, and when he talks politics he excites sufficient opposition to get, occasionally, a cartoon in some of the English papers. No one has any difficulty in recognizing that the cartoon refers to Mr. Tait. From his abilities and widespread reputation, Mr. Tait is becoming a well-known figure in England. He has some reputation as a detective, and is occasionally interviewed to secure his opinion in noted criminal cases, as the Whitechapel murders. The following story, which Dr. Littlejohn, of Edinburgh, relates to his students, will illustrate some of Mr. Tait's characteristic methods of investigation. In this case, no doubt, Mr. Tait saved a man from execution. Two men of drinking habits occupied the same room in Edinburgh. One day the men had a little quarrel, and the next morning one of them was found dead out on the streets, with his skull fractured. The police found the other man asleep in his bed, the door locked, the room bespattered with blood, and a window in the room open. Of course, the man in bed wss accused of the murder, but he stoutly denied it. But the evidence appeared against him, especially as the two men had quarreled the day before. Dr. Littlejohn was health officer of Edinburgh, and enjoyed a wide reputation as a clever man and shrewd detective. Accidentally, Mr. Tait visited Edinburgh at this time, and Dr. Littlejohn said, "Mr. Tait, you are just the man we want to see; we have a puzzling case, and maybe you can help us out." So Mr. Tait carefully examined the room and its bloody furniture. The beds in the room were placed against the wall, one above the other, like the bunks on a ship. He noticed that just above where the dead man had slept, the wall was spattered with a spray of blood. He traced the walls around the room to the open window, and observed that all the way along the wall was spattered with fine drops of blood, as if it had been blown on to the wall. The blood was on the wall in fine points. Mr. Tait knew nothing of the case. He had not seen the dead body, but he came back from the open window, and said that the man in bed was innocent of murder. This was received with incredulity. Mr. Tait's explanation was that the dead man had a polypus in his nose, and that during the night it had started to bleed, choking him, and in his half drunken sleep, the man blew his nose every little while, bespattering the walls with blood. He followed the wall around to the window, and then fell out of it, and so fractured his skull. Dr. Littlejohn went and examined the dead man's body, and found a polypus, with the clotted strings of blood hanging from it, in the dead man's nose.

Mr. Tait is an advocate of a liberal public policy in regard to State and individual. He holds advanced views on woman's rights, that the professions and education should be free to all, regardless of sex. But he claims that the extremely high education of woman, and her special attainments in the sciences, are gained by the individual at the expense of the race. Brainy and scholarly women, who are specially skilled in science or the professions, are those who do not have children. They leave the production of children to their sisters who have inferior brains. And brain on the part of mothers is what the race particularly needs. Hence, the race is not specially benefited by the cultivation of any art or science among women which entices the superior brains to avoid maternity.

Mr. Tait, like many other Britians of means, possesses a country seat. This is a beautiful home in the New Forest, about eight miles from Southampton. Mr. Tait is enlarging and beautifying this valuable estate. The interesting affair about the house on the estate is the rare and quaint collections found in it. As Mr. Tait remarked to me that when I got into his country seat I would be living in the sixteenth century. The ceiling covering the reception room is made from the timber taken from the room in which Catherine of Aragon was married to Arthur, Prince of Wales. Quaint old bureaus, carved chests and ancient looking chairs are found in all the rooms. Pictures, and casts, and busts, and horns, and old relics of every description may be seen through the house. Hosts of old dishes, porcelaine, rare china ware and many remnants of firearms can be seen. Relics from the days of chivalry and the tournament are not few. It is a model house, richly furnished. He keeps quite a number of servants to cultivate and improve the estate, which is adorned with fountains, conservatories, hot houses, orchards, lawns, well ordered gardens and walks. There is a little brook that runs through the land, and on one side is a strip of forest, which adds much to the beauty of the grounds.

Mr. Tait has a very fine yacht on which his family and friends make various short excursions during the summer. He seems to take much pleasure in short excusions of a day or more. He is quite familiar with the country, its history and its relics. He is fond of studying architecture, and in short journeys I have listened with interest to his views of church architecture. He notes that the old churches of England are all built at certain definite angles which refers back to the old sun worship. The churches are built to certain saints, and the angle of the church will correspond to the distinct position of the sun at certain periods of the year. He is fond of good paintings, and his criticisms and remarks on pictures are well worth hearing.

Personally, Mr. Tait is a short, stout man, weighing about 200 pounds. He has a large head covered with dark iron gray hair. He wears only small side whiskers. He speaks moderately quick, and thinks very rapidly. In operating, when complications arise he makes quick decisions and then quickly executes them without hesitation. He is very reticent and quiet while at work, but when not engaged, is often talkative and enjoys a well told story. He has a large fund of humorous and witty stories, which he can relate in the most pointed style. He is a good entertainer at dinners. Whenever he talks his remarks on any subject command attention. In general, Mr. Tait is a quiet man, and often one can see him for a long time engaged in his own thoughts. He is an inveterate reader and reads in his carriage and on trains. He is fond of good theatres and frequently attends them. I have heard him speak of Shakespeare as one of the greatest authors that ever

lived. That in Shakespeare was found the very heighth and depth of human thought. Yet he does not believe that Shakespeare, whose home was thirty miles from Mr. Tait's, at Stratford-on-Avon, wrote the great historical plays which bear his name. He thinks that some greater mental force than Shakespeare of Stratford-on-Avon, must have produced the profound thoughts in those great plays. His idea is that Bacon contributed largely to them. In the opinion that some great intellectual force besides "Willy" Shakespeare contributed to those plays the greatest mine of thought, Mr. Tait is not alone. But one of the attractive things about Mr. Tait is the trenchent and original way in which he grasps essentials and uses them in what seems the most natural way. At eighteen Shakespeare left Stratford-on-Avon unable to write his own name. At about forty-eight he returned to live at Stratford-on-Avon, and it is quite authoritative that the rest of his life was very dissipated. Is it natural that such a man could utter all the great thoughts and little thoughts that the human race know of? The essence of law, theology, and medicine are spoken of with the ease of ordinary conversation. Philosophy with every shade of thought and feeling is noted. There are no traditions of wise sayings attributed to Shakespeare about his home. The human race know few thoughts of life left unuttered by Shakespeare. Surely, an uneducated man could not have said them. No doubt "Willy Shakespeare" wrote the lower plays of grosser thoughts and blunter morals.

Mr. Tait lives in a retired part of the city close to his private hospital. He spends much time in traveling to operate in different parts of Great Britian and other countries. He was a great admirer of the celebrated surgeon, Syme, and even to-day he uses little short-bladed knives, and drives heavy gray horses, just as that noted operator did. Mr. Tait's heavy gray span with their vigorous action, are well recognized in Birmingham. He has excellent business capacity, and has superior powers in organizing and conducting plans. He has a genius in doing the right thing at the right time, and in the right way. For example, when he came to Birmingham over twenty years ago, he insisted on practicing his specialty and nothing else. Some of his friends said it was foolish to turn away work because it was not gynecology or abdominal sections, but Mr. Tait said "it was casting bread upon the waters." Doctors have told me that he refused good paying cases because they were not in his field. To-day Mr. Tait has one of the most lucrative practices in England with an increasing reputation. He upholds the dignity of the profession by charging liberal fees, and yet he does an enormous amount of skilful work for the poor. He has a keen memory of past experiences, and recalls with vivid distinctness, past cases. He makes up his mind on subjects and announces it and will tenaciously defend his views. Those familiar with him and his writings are quite aware that he is apt in natural explanation of phenomena and to expose the truth of matters complicated. The very simplicity of his work is what confounds. His whole operative procedures smack of simplicity. His perineal operation is the best and most useful example. He is a very interesting companion to travel with, as he entertains very clear views of events and phenomena.

In conclusion, I have to thank, for well remembered kindness in making my sojourn in Birmingham pleasant, Mr. and Mrs. Tait, Dr. Christopher Martin, the lady superintendent and nurses of the hospital. May their coming days be happy and their nights of slumber full of splendid dreams.

No. 999 West Madison Street.

SOCIETY PROCEEDINGS.

The Southern Surgical and Gynecological Association.

DISCUSSION ON ALBUMINURIA AND ITS RELATION TO SURGICAL OPERATIONS, WITH REMARKS ON THE RELATIVE MERITS OF ETHER AND CHLOROFORM.[1]

Dr. William Warren Potter, of Buffalo: The experience of surgeons in the use of anæsthetics is one of the most important phases of the subject that can be presented for discussion. It is an all-absorbing question, one which lies at the threshold of all operations, but on this occasion I shall only attempt to accentuate one or two points.

It has fallen to my lot to have considerable experience with the administration of both ether and chloroform for surgical and obstetrical purposes, and this personal experience, together with such re-inforcement as it has obtained from the opinions of others, has led me to the conclusion that, in healthy patients, those in whom we are quite sure there is no heart lesion, and where we have the assistance of a skilful anæsthetizer, the surgeon may rest quite easy in the use of chloroform.

I remember gathering much experience in the use of this anæsthetic during my military service. It is quite within the limits of truth for me to assert that I have administered chloroform more than three thousand times. I have been present during its administration at least as many more times, and I have never witnessed a death or personally known one to occur from its use.

I recall the fact that some years ago a statistic was put forth, though I cannot say by whom, tending to show that the ratio of deaths between chloroform and ether was as one to three thousand for the former, and one to ninety thousand for the latter. Of course, even admitting this to have had an approximation of truth in it at the time it was announced, all this is changed at the present day.

I find that it is quite common among my surgical friends to employ ether during their operations rather than chloroform, for the reason that in case of the death of a patient from the former they would find it easier to justify themselves in the minds of their neighbors and friends, than if chloroform was used. Nearly every one whom I have heard express himself has a preference for chloroform, but feel that they are not justified in using it in civil practice at the present time.

One of the particular points that I wish to emphasize is in regard to the duty of the anæsthetist at an operation. I feel warranted in asserting that no surgeon can afford to undertake an operation, which requires an anæsthetic, without obtaining the services of a most experienced and capable man, an expert in the administration of anæsthetics. It has been a matter of frequent observation on my part, and I have no doubt many of the gentlemen present have observed the same thing, that very frequently a physician casually present at an operation is asked on the spur of the moment to administer the anæsthetic. Now, such a physician may be a very accomplished man in so far as the ordinary practice of medicine is concerned; he may know ever so well

[1] For abstract of paper see THE JOURNAL for Nov. 28, 1891, p. 851. The discussion not being received until this week, and not elsewhere published.

how to treat pneumonia, and typhoid fever, much better, generally speaking, than the operating surgeon himself; moreover, he may be a very competent surgeon with reference to the care of minor surgical cases, and perhaps skilful in the treatment of fractures and dislocations, but know very little about the proper administration of an anæsthetic. I lay great stress upon the employment of an expert anæsthetist in surgical operations, particularly, where the administration must be prolonged, or the patient profoundly narcotized.

It is a well known fact that the skilful anæsthetist will administer only a minimum of the anæsthetic. He will not saturate the patient, the atmosphere of the operating room, and everybody and everything connected with the operation with the anæsthetic; whereas the less experienced amateur anæsthetist will be almost sure to use several times the amount required. And this, to my mind, is a very important question in reference to the subject under discussion, one that has great weight with reference to lesions of the kidney. A general rule to be kept in mind is: when chloroform is administered, watch the heart; when ether is administered, watch the respiration. The surgeon himself should be relieved of this watchful care, and give his whole mind to the operation, hence the anæsthetist should be experienced in detecting the first warning of danger, which is oftentimes lost sight of. If the halcyon moment, when danger can be averted, is seized upon, a life may be saved that would otherwise be doomed.

Dr. Long seems to be of the opinion that an anæsthetic has very little effect upon a healthy kidney, or even upon a kidney with only slight lesion. Probably this, as a general observation, may be accepted as correct, but there are so many exceptions to it that it is never safe to administer any anæsthetic for a longer period than is absolutely necessary, or to use more than is consistent with the most conservative and economic regard for life. I have no doubt that a kidney with even a slight lesion may withstand the administration of an anæsthetic given by a careful and experienced man, and come out of the ordeal unscathed; whereas from the same kidney, under the mal-administration of an anæsthetic, may develop serious and possibly fatal results.

The purpose of my remarks has been to emphasize the one general idea with reference to surgical operations, namely, that always an experienced anæsthetist should be employed, one who has had a knowledge of the condition of the kidneys of the patient who is to be anæsthetized, as well as of the heart, and who is familiar with the dangers to be avoided on the one, as well as on the other hand, one who will shun Scylla and Charybdis alike; the mortality from the use of anæsthetics under such precautions will be reduced to a minimum so far as human judgment can so reduce it.

Dr. Geo. A. Baxter, of Chattanooga: It strikes me in the class of surgery that I deal with, mostly from machinery, heavy railroad car wheels, where intense shock is existing and continuing for some time, that it would be a very difficult matter indeed to determine the exact effect produced by the anæsthetic so far as the kidneys were concerned. I have repeatedly seen more or less suppression of urine where no anæsthetic was given during the prevalence of shock, and I have usually attributed that condition to shock rather than to the anæsthetic. It seems to me in the consideration of this question the condition of shock must be taken into account, and time and again in severe operations, you will have to draw the urine or make an attempt to draw it, and find but a small quantity there. In one recent case that I recall to mind just now, an amputation at the thigh from railroad injury, I do not believe there were two teaspoonfuls of urine passed. Now, that condition I do not believe, was due to the anæsthetic, and it was chloroform that was given.

I am free to say, following the doctor's advice, that I have a careful assistant who administers the anæsthetic, and it is not once in ten times in that class of surgery (railroad surgery) that I use ether at all, and only during the progress of the anæsthetic when I find difficulty do I resort to ether then as a stimulant.

Dr. John D. S. Davis, of Birmingham, Alabama: I hardly think the cases of animal experimentation mentioned would be a guide in the administration of ether, as in all cases the anæsthetic was pushed until death ensued. I use chloroform most frequently, and believe in the great majority of cases that it is the proper anæsthetic to use, but a great deal depends upon who uses it. There is great danger in having an inexperienced man to administer anæsthetics. When we go to operate we should always have with us an experienced assistant, and I never allow anybody who is not in the habit of administering anæsthetics to do this work.

As to the albumin in the urine, I believe in most cases that operations lessen the quantity and the strain on the kidney, whether the microscope reveals anything more than albumin or not. In urethral and bladder troubles I operate and pay no attention to it.

As to irritation in the bladder, I have always found that the sooner you relieve it and establish drainage the sooner you relieve the strain upon the kidney, and the better the result, whatever the irritation may be, or whatever the test may reveal in the urine. And I apply the same rule in much of my abdominal and pelvic work. Remove pressure to abdominal viscera and the kidneys will seldom be injured.

Dr. Hunter McGuire, of Richmond, Va.: I do not think we can discuss a more important subject than the one Dr. Long has given us; but I do not think he has shown that chloroform produces albuminuria. I was taught thirty years ago that albuminuria frequently followed a surgical operation, no matter whether chloroform, ether or no anæsthetic was given. I know that without anæsthesia albuminuria follows surgical operations in a very large number of cases. In the first case he gave us, there was albuminuria following the introduction of the catheter. It is much more likely that the catheter did the mischief than the chloroform. I know that I am within bounds when I say I have given chloroform 12,000 times. I give ether too. I think every good surgeon should select his cases. No one has a right dogmatically to give one or the other of these anæsthetics. But I arise more particularly to answer Dr. Potter. He says statistics show that chloroform kills one in three thousand; ether one in ninety thousand. I merely want to state that there are no facts or statistics to justify such an assertion in all of the cases in which it is given. We have no data or figures by which we can make such statements as to the number of deaths from chloroform and ether, and the number of times each anæsthetic has been given. So far as I am personally concerned, I think chloroform is safe, as a rule, but we should select our cases. I venture to predict that when the experience of the civilized world is collected and analyzed, it will be found, if indeed it is possible to definitely settle such a question, that in certain cases ether should be given, and in certain other cases chloroform employed, and that every good surgeon will be expected to exercise discrimination in the selection of his anæsthetic. For myself, I am wedded to neither one nor of these agents. In general terms, in feeble, very anæmic people, or those suffering from the prostration of shock, or loss of blood, I prefer ether; in either the young or the old, or in cases when cardiac, renal or pulmonary trouble is suspected, as a rule, I think chloroform is safer. Accidents occasionally follow the administration of both ether and chloroform, this, too, in the hands of

competent and most skilful men. Already between four and five hundred deaths from chloroform have been reported, and nearly, if not quite, two hundred deaths from ether. What the ratio of either of the agents is to the number of inhalations, we are so far unable to determine. That both agents sometimes kill the patient, the most bigoted and partisan advocate of either ether or chloroform must admit. But which one of the anæsthetics is more dangerous and apt to kill is the paramount but undetermined question. Safety of the patient is the important point, before which all else should yield: compared to that, inconvenience, comfort, time, money and everything else are as nothing.

Dr. Willis F. Westmoreland, of Atlanta, Ga.: I desire to make a few remarks on this very interesting subject—first in reference to albumin, and how it is found. I think it is due to some bladder trouble, whether there is any deposit of mucus or pus that will give you a reaction of albumin, outside of any pathological change in the kidney. I do not believe in splitting hairs on a subject of this kind. I think, theoretically, we split hairs; and that, practically, we do not pay enough attention to it. That is where the trouble lies. We draw conclusions when we make the operation; nine times out of ten we never examine the urine previously, unless there is something in the history that calls our attention to albumin.

Another point that I desire to call attention to is this, that I do not think the presence of albumin amounts to anything unless you make a microscopical examination, and then, if you should find a quantity of kidney cells or tube casts, I do not think the use of either chloroform or ether is contraindicated, because unless you find one of these two conditions, you have got little or no pathological change in the kidney, as a rule. Albumin may be present from the start. It may be traced to albuminous food of some kind, or it may be present from some reflex action, that is absolutely no contraindication to an operation. I am free to confess, it is in very few cases that I examine the urine, unless there is something in the peculiar aspect of the patient that directs my attention to it. Unless I find some pathological change by microscopical examination, I go ahead and do the operation. I do not include emergency cases at all, for we all know when life is at stake, no matter what the condition is, we operate. All of these cases can be ruled out.

With regard to anæsthetics, the surgeon should use that anæsthetic with which he is the most familiar, and accustomed to giving. If he is accustomed to administering chloroform, he should continue to use it in his practice and not change to another, unless there are idiosyncrasies or facts in the case that would lead him to do otherwise.

During the last six years, I have had two experienced men to give anæsthetics for me. If one cannot accompany me, the other usually does, and when I go into the country to operate, one of them goes along with me. Take some man that is unaccustomed to administering anæsthetics, he is frightened at the least little thing, and he will worry you to death almost, with his continually feeling around for the pulse. He has a scared expression, and nine times out of ten the surgeon is in no humor to operate with such an inexperienced anæsthetist. I make it a rule to take an experienced anæsthetizer along with me, and charge the expense to the patient.

Dr. Cornelius Kollock, Cheraw, S. C.: I agree fully with Dr. McGuire, that no man should be dogmatic in his opinion with regard to the use of anæsthetics. I have been inclined to use chloroform more than ether. I have used chloroform two thousand times or more, without a death. I have used ether about two hundred times, and have had two deaths. I recall one case I lost, where its use was objected to. It was a case on which I operated for the removal of an ovarian cyst. The family physician whose patient it was, was a near relative. He insisted upon using ether. I asked him whether everything was all right as far as renal lesions were concerned, and he assured me it was. He gave ether. The operation was completed in less than forty minutes, but for the first thirty or more hours after the operation, the patient passed less than 3 ozs. of urine. The other case was that of an old lady, 68 years of age. She died. She was in such a condition that she would have died whether she had taken ether or not. I think, if chloroform is not watched closely, there is more danger attending its administration than ether properly given. There is more danger in giving morphine than laudanum, but who hesitates to give it? We must exercise more caution in the use of these anæsthetics, and give the one the case indicates or calls for. Prejudice should exert no influence in the selection of an anæsthetic, or in the administration of any remedial agent, as too often happens.

Dr. Joseph Price, Philadelphia: Drs. Davis and Westmoreland have called our attention to two facts so vital in this connection, that I must allude to them. Both have stated substantially, that they are in the habit of going to perform operations with their expert or trained anæsthetizer. We are all more or less interested in baseball, and lovers of the National game know that there is little danger of the Boston Club going to New York without its battery. It is of vital importance to have their battery, the pitcher and catcher, to win in that game, and the same holds good with Dr. Westmoreland in his surgery in the country, when he goes with his battery, if he wishes to play a good game.

All that has been said by Drs. Davis and McGuire, I agree with fully.

Dr. McGuire has called attention to the causal relation which chloroform may bear to renal mischief; that it may induce albuminuria or renal trouble. That is a very curious statement to me. We all know that in puerperal eclampsia, in that class of cases in which we use it so commonly, we commonly find albuminuria, though chloroform is considered by all a safe remedy, and is used almost universally. For myself, I have not found, in my experience, evil results from its use as far as the kidneys were concerned. The difficulty in regard to the use of chloroform is, that you are not sustained by your colleagues in case of an accident. Chloroform kills quickly. Now, your patient is all right; then, in the snap of a finger he is dead. That holds good not only when used in surgery, but also in experimental work. I have seen a cat or dog straighten out all extremities, perfectly dead, and by no means could I resuscitate that cat or dog. The same holds good in regard to the human subjects.

Some one alluded to the use of chloroform or ether on the debauch. We have with us a distinguished surgeon of rare good judgment, and if my memory serves me right, a man entered his clinic with a contused and suppurating finger. The surgeon refused to amputate, stating that the man's condition would not justify surgery. But the man stated to him, some one else would do it if he didn't. An anæsthetic was given, and the man died in a few seconds. If the gentleman recalls the case, he perhaps will correct any error I may have made in reporting this case.

Now, it is a difficult matter indeed to say that your patient dies of anæsthesia or surgery. I am satisfied from my own observations, at home and abroad, that many patients die of anæsthesia. The great group of cases we see in general hospitals, water-logged and battened down with ether, I cannot see how they get well. I am satisfied that many of them die of anæsthesia alone, without surgery. If some patients are bound down thirty minutes or an hour, without surgery, I am satisfied they will die. Again, I will go farther, and say that if some of us were kept under the influence of an anæsthetic for an hour and a half, as given by the resident

of a general hospital, we would die of the experiment alone, and with a healthy kidney. I have not found scant urine following the prolonged anæsthesia, excepting in exceptional cases, and the condition of the lesion I was operating for was quite sufficient to explain the presence of albumin, and the presence of renal trouble.

Probably some of you remember the lengthy article by our distinguished ex-chairman, Dr. Engelmann, of last year, on renal trouble with albuminuria, due to advanced forms of pelvic disease. We all well know that in this class of cases, where there is a fibroid or suppurative form of trouble, we have vesical, urethral and renal trouble from pressure, and we have recognized the importance of saving these patients from renal trouble, if possible. I have had some recent experience with scant urine and an abundance of albumin. The symptoms were marked in a recent case, some five months ago. A small fibroid, about the size of a child's head, developed, with a large collection of pus. The woman passed only a drachm of urine in the following forty-eight hours; her kidneys reacted, and she recovered, notwithstanding the fact that the undertaker had been ordered to come for her, as we felt sure she would die, and we told him to hold himself in readiness to receive her. She got well in spite of our anæsthesia, and a complicated operation which lasted some forty minutes. In this class of cases, a number of patients die a few hours after the operation—die from so-called shock, die of collapse, and it is difficult indeed to say whether they die of surgery or ether. I am satisfied they die of ether, or of what I sometimes call "chronic surgery." A recent teacher said to a class of some 800 medical students, in a difficult operation, while he was sweating over it: "Gentlemen, you will have many a difficult case to deal with, but you must wriggle through with them some way." (Laughter.)

Dr. Albert VanderVeer, of Albany, N. Y.: I have listened to this paper with much interest, as well as the discussion. I have read many of the papers that have been given to the profession within the last few years, and have endeavored to gather from them all the information I could bearing upon this subject, especially the report of the Hyderabad Commission, and the paper presented to the profession by Dr. McGuire. While Dr. McGuire is a little emphatic in saying that we should not be dogmatic in our use of anæsthetics, there is a little expression of dogmatism here to-day.

Dr. Price spoke of deaths from ether. When we look back to the cases that have died where chloroform or ether has been administered, we generally find a pathological condition there that accounts for the death. Take a case like this: You have a man suffering from stone in the bladder. You examine his urine with the utmost care; you find no casts present, there is an absence of renal epithelium; you feel comparatively easy, also, as regards the pelvis of the kidney; you do a suprapubic cystotomy. Such a case I had not long ago, in a man 72 years of age. I did an operation for a good-sized stone, and believed his kidneys were in good condition. Ether was given as an anæsthetic. The operation was quick; the patient recovered nicely, but died on the fifth day, with the symptoms of collapse. Pulse very weak some time previous to death.

We made a post-mortem, and found in the pelvis of the kidney a number of small multiple abscesses, only one kidney being affected in this way. The other kidney had a red, hyperæmic appearance. These kidneys correspond with what we call a *surgical kidney*. If there is any gentleman here who has studied this subject, will he kindly tell us how to diagnose surgical kidney, and tell us when it is present.

When we have an experienced anæsthetist to administer the anæsthetic, I believe chloroform can be used, and that we should make our operations as quick as possible. I do not think it produces albuminuria, but I have seen deaths from chloroform, but not a death from ether. Early in my practice, I felt that chloroform was an anæsthetic that should be used with care, and I have avoided it, to a great extent, for this reason. I saw early a death from chloroform, where the anæsthetic was given only for a few minutes, and the man died. Another case occurred in the practice of one of my associates in Albany, where a man came into the clinic in the condition Dr. Price speaks of —an alcoholic condition. He had some trouble with his finger. The surgeon said, "We will amputate this finger." Ether was used, but he was in such a condition that a few drops of chloroform were added, mixing the two. The man had taken, perhaps, but half an ounce of the mixture, and was dead. A short time ago, another physician in our part of the country had done an operation upon a man's face and chin. I believe he had done the operation in his office. The man came back for an operation to loosen up some cicatricial tissue. The doctor had no one present in his office but two medical students, who had given chloroform before. They commenced to use chloroform, and before the doctor was ready to begin the operation, the man was dead. In my operations upon children, I use chloroform. I use chloroform, perhaps, in some cases where we have a very strong, able-bodied man to operate on.

In regard to ether, one gentleman made the assertion that we must select our cases with care. If we have reason to suspect kidney difficulty, I think chloroform is the safer. In the administration of ether, I do not like to say how many times I have used it. I have always made an effort to get one special man in my city to administer the anæsthetic; but if I have a telegram to go a few miles in the country to see a case of strangulated hernia, and my assistant is not to be found, I have to rely upon some one else to give it. I find that, in a large number of cases, I am obliged to do this to some extent. If there be a condition of anxiety, I give sometimes a hypodermic of 150th of a grain of atropia, and one-sixth of a grain of morphia. It relieves the nausea, etc.

Dr. H. P. C. Wilson, of Baltimore, Md.: We have under discussion a subject which is interesting to every one of us, and I simply arise to give my testimony in regard to the use of these anæsthetics. I have been giving chloroform for forty years, and I continue to give it, and I prefer it above all anæsthetics. It is true, deaths occur from chloroform, and deaths occur from ether. Deaths occur from alcohol, ether and chloroform. I saw one reported a short time since from the A. C. E. mixture, and the point that had been brought out to-day is a very strong one, that is, you must have the proper man to give the anæsthetic. Personally, I cannot do myself,or my patients, justice if I have an inexperienced man to give the anæsthetic. How often I have given chloroform I cannot say—certainly, I think, ten or fifteen thousand times in forty years' practice. Hardly a day passes that I do not give it, and sometimes repeatedly. I have never seen the slightest ill effects from it, nor have I ever seen a case in which I was frightened as to the result; and in going the rounds of the hospitals in Europe year after year, I have not seen ether given once. I have seen the surgeons in the general hospitals of Liverpool giving chloroform profusely. I saw one gentleman give alcohol, chloroform and ether, and that was Dr. Savage, of Birmingham, one of the most skilful and successful operators in the whole of Europe, but he is the only one that I have seen use anything but chloroform in either Edinburgh, Berlin, Liverpool, London, or Paris. We all feel when we are operating, on account of the sentiment of the profession in some localities, that if a patient dies with ether it is all right, but if she dies with chloroform it is all wrong; hence it is, some of us get nervous when we have a weak patient. We give chloroform for some time, and if the patient seems a little weaker we are tempted to give ether, simply

because of the prejudice against chloroform in some localities; and we know that if from any cause our patient should die during, or after chloroform, we are sure to be blamed; not so with ether. The former is just as safe as the latter when judiciously given.

Dr. W. H. H. Cobb, Goldsboro, N. C.: I heartily agree with what has been said by Dr. Wilson, and I, like him, am wedded to chloroform. I have used ether but very little, and would not use it except I had a case of "chronic surgery" that Dr. Price speaks of. I think a great deal depends upon the manner of its administration. A great many push it too rapidly. I always precede it by giving whisky or brandy, and a small dose of atropia and morphia with it. I never push it. If I cannot have the proper assistant, I watch the patient myself until I get him thoroughly under the influence of it. I watch the respiration more than I would the pulse. A great many physicians feel the pulse and do not watch respiration. I find respiration would indicate danger quicker than the pulse.

Dr. Richard Douglas, Nashville: The subject, I believe, was albuminuria and its relation to surgical operations. The discussion has taken rather a turn towards the use of anæsthetics, and I only wish to say that, personally, I prefer chloroform. But Dr. Price has sounded the keynote. The sentiment of the profession and laity is against us if we should have a death from chloroform, and for that reason I fear to use it as a general anæsthetic, though I usually prefer it.

It has occurred to me to meet with several cases of abdominal surgery in which I found albuminuria present; and only recently I had the misfortune to have a case of suppurating ovarian cyst come under my care in which the microscope revealed an abundance of tube casts and undoubtedly organic disease of the kidney. But I was forced to operate, and then I gave the question some consideration as to what anæsthetic I should prefer. Finally, I deemed it best to give chloroform. Absolute suppression of urine followed, although there was reaction from the shock of the operation. The cyst was bound down by adhesions more or less; reaction followed, suppression of urine, and then death.

In all cases of fibroids—and I meet with a great many of them—I have taken the precaution to examine the urine, and its occurrence (albuminuria) is almost a constant complication with fibroids, not so with other evidences of organic disease of the kidney. You find albumin arising from pressure, if that may be given as a cause of albuminuria in pregnancy. We should be careful to look for something else than albuminuria. The essayist in his conclusions says that albumin was always an evidence of organic disease of the kidney, if I understood him correctly. It seems to me, that statement is hardly borne out by authorities. It is recognized as a transient affair sometimes due to many causes—emotional; for that reason, I should regard the presence of albumin itself as a contra-indication for operation.

Dr. Henry O. Marcy, of Boston: It is scarcely fair to prolong this discussion, yet I find every man has his opinion and the reason therefor, and coming as I do from the East, it is perhaps expected that I should say a few words in defense of ether as an anæsthetic.

The question which our reader has given us seems to me to have been fairly stated. I congratulate the essayist upon his thoughtful paper; it will thoroughly bear re-reading after it shall have been published in the Transactions. I am glad, however, the discussion has taken a broad range, because it is a practical question, and one difficult of solution. We all have our own impressions, thoughts, experiences and conclusions in reference to this matter, and have a perfect right to them.

I recall my experience with Sir James Paget in St. Bartholomew's Hospital more than twenty years ago, immediately following the death of Sir James Simpson. It is not generally known that the indirect cause of his death was the giving of his favorite anæsthetic chloroform, the patient dying upon the table before the operation was commenced. In two or three days the news was telegraphed over the world that this great master of surgery was dead. Angina pectoris was the so-called cause of his death. At this time Sir James Paget remarked, "I understand you are from Boston, and that you believe there, that the only true and proper anæsthetic is ether. Would you have the kindness to give it before my class in my amphitheatre, and explain its physiological effects." As a young man facing 500 pupils, I thought it was a rather difficult task. He said, "I do not suppose sulphuric ether has ever been administered in London for surgical operations"; and stated that within seven weeks many deaths had been reported in London from the administration of chloroform alone.

Dr. Price has emphasized the danger from chloroform in its effect upon the cardiac function, and this oftentimes is so sudden and pronounced that we are almost helpless. The doctor's experience coincides with my own, for I have seen over and over again, in the physiological laboratory, the death of animals from the administration of chloroform as an anæsthetic. I believe ether will kill when it is given in unusually large quantities. It is sometimes poured onto a napkin with the freedom of water, and then physicians wonder why there is not free and satisfactory respiration. They displace the residual air in the lung by the heavy ether vapor. The condition of the patient, the state of the kidneys, and the general physical vigor are all questions pertaining to this discussion, which we have not time to enter into this morning. No surgeon has a right to assume the responsibility of caring for his patient in the undertaking of a grave surgical operation until he has first carefully examined and determined these factors.

The best paper, and allusion to it has been omitted by every speaker, is that which was read by Professor Wood, at the International Medical Congress in Berlin, in which he reviews this subject carefully, showing the physiological conditions that pertain to the dangers of giving ether and other anæsthetics. I promise that when you come to read it, you will feel greatly instructed and indebted to Professor Wood for his masterly article upon this subject so important to every surgeon.

Dr. J. W. Long, of Randleman, N. C., in closing the discussion, said: I do not pretend in this paper that the subject is treated exhaustively, or that the deductions I have drawn are conclusive. I only hoped to draw the attention of the Association to this important subject in its various phases. I believe from my observations, that many surgeons largely overlook the dangers which may arise from the kidneys, and that we have very confused ideas as to whether these dangers arise from the effects of the anæsthetics, or from the effects of an operation.

I think Dr. Potter has sounded the keynote when he said we should have a man who understands the giving of anæsthetics, and that man should have a due appreciation of the kidneys and the dangers that arise from the kidneys.

Drs. Baxter and McGuire emphasized one point I hoped to make, that the term albuminuria, used in its generic sense, is an expression of kidney trouble. They emphasized the fact that such a condition may arise from the shock of the operation independent of the anæsthetic. The researches of the English show that albuminuria may be produced by abdominal section irrespective of the anæsthetic given; while it is almost an every day experience that operations in the genito-urinary tract induce marked kidney disturbance. When we come to analyze the influence of anæsthe-

tics upon the kidneys, we must choose operations outside of the abdominal and pelvic organs.

Dr. Davis says an anæsthetic may produce suppression of urine, and cites an experimental laparotomy on a dog in which suppression took place; but his case fails to illustrate because inabdominal operations it is impossible to separate the influence of the anæsthetic from that of the operation.

I do not think it has been proven that we can have a permanent albuminuria without organic lesions of the kidneys. While I do not consider in all cases of albuminuria we have organic renal lesion, for possibly albuminuria may arise from some functional disturbance, yet if it continues organic renal lesion always follows. This point, raised by my friend, Dr. Westmoreland, is a little foreign to the purposes of my paper. Another point mentioned by Dr. Davis is the tests for albumin. I will not answer, as it does not properly belong here, but will refer him to my lectures on that subject delivered before the North Carolina Medical Society this year. (See Transactions of that Society).

American Electro-Therapeutic Association.

First Annual Meeting of the American Electro-Therapeutic Association, held in Philadelphia, September 24, 25, and 26, 1891.

(*Discussion Continued from page 120.*)

Dr. Morton: I will turn to the point made by several observers. None, I notice, were critical in requiring an answer except Dr. Nunn, who seemed to think I had based too much upon chemical processes alone, and that I should have taken into account certain other unknown and unseen processes, like vital forces, etc. I can only reply to that by saying that I was obliged to deal with what exists. The chemical life of the animal cell is an actual fact; you can deal with it; we know what its history is, and we know its life; we know where it goes, and that it travels around in the blood stream; it goes through the vascular vessels, and we know its excretions, which is most important, for by its excretions we detect it. By its very existence as an animal we can say that it makes energy, and that it must be a positive force. I do not know anything about vital forces. I never tasted, heard, or felt them; I know nothing of entity or ideation. I do not think that we need go into vital mysteries or vital forces, as it is just as much a mystery at the end as it is at the beginning; but the chemical force is a demonstrable fact—it is a thing.

The doctor also made a point about static electricity, and I do not agree with him in that it does not possess any electrolytic effects. Had I time I would have read a further quotation from Dr. Hodge proving that the static current must have electrolytic effects, and we know from experiments that it must have.

The doctor referred to some facts about electricity on the two sides of the body. They are very interesting points in animal electricity which I did not touch upon. While Waller found that when the current was so directed that he could detect the current at the heel, and he found another case where the heart pointed on the other side of the body, he found the same on the other side. I am not talking of external surface, which vary all over the body, they change circuits according to the electrolytic condition of the parts by the disintegration of tissue that is localized; that is, where it starts from. You find the heart is there all the time, and from there the current starts all over the body.

I should have said, and Dr. Robinson's remarks bear out my own, I used one heavy disperser. Dr. Massey says we should have further data, and that I am collecting. I have made tests in various cases which show that the internal source was electro-positive, and that the pathological process was just the same as the physiological. Dr. Massey also brought up the point whether there be any decomposition in these. The doctor says that there is proof positive that the atoms and molecules have passed toward the centre and paired with new molecules. Dr. Massey drew attention to another point—that of the relation of vegetable organisms to our present ideas of disease. It seems to me that in the chemical processes, which I consider to be a disease, when they are going on it does not matter whether it is caused by the presence of a particular organism or the chemical products of that organism or whatever it may be. Of course you cannot kill the bacteria and nobody has demonstrated that without killing the patient. Then we would have a desideratum, but in the meantime until somebody discovers a germicide, reliable, and which is not noxious to the patient, we will use something which will destroy the chemical products and put the tissues in such condition that they will be able to resist the invasion of these poisonous animals, or whatever they may be. And by destroying the nidus this cell will be unable to live and grow. I thank you all for your kind expressions of opinion and hope that some of them will do something toward settling the questions of polarity. Remak started it, and ever since we have been struggling and have accomplished little, and it struck me that this basis might be a silver thread toward that region which all of us wish to take, which we all have to excuse ourselves for taking, and after all have to fall back on the chemical products for solid ground.

Dr. Plym. S. Hayes, of Chicago, Ill., read a paper entitled

SOME POINTS IN THE TECHNIQUE OF ELECTROLYTIC EPILATION.

The removal of superfluous hairs by means of electrolysis was primarily devised as a purely therapeutic measure. It was only after this method had been demonstrated to be a perfect success in the destruction of hairs in entropium that this procedure was diverted from its strictly therapeutic channel and applied to a broader field, and used in what may be called a cosmetic rather than a therapeutic sense. Even if confined to the cosmetic use there is a decided therapeutic effect produced in the liberation of many ladies from a self-imposed seclusion, if not actual close confinement, akin to prison life. The gloom produced from this seclusion has frequently made life a burden and been a factor of no small moment in the development of a melancholia.

A correspondent writes that he understands that this operation is largely a mechanical one and he desires instruction enough to know how, and then he will be able to do as well as any one. This latter statement he does not make, but from the tenor of his letter is readily inferred. The operation is mechanical much in the same sense that the repairing of a watch is mechanical; but it is not every watch maker, to say nothing of the broad class of mechanics, to whom we would intrust our valuable watches.

Those who first demonstrated the possibility of the permanent removal of superfluous hair by means of electrolysis did their work so thoroughly and understood the laws of electrolysis so well, that but little has been added to the technique of the operation during the past six years.

Whether the operation is for therapeutic or cosmetic purposes two points are to be kept constantly in the mind, namely: to destroy the hair and then see to it that you do not leave indelible proof in scars that you have done your work thoroughly.

The statement is frequently made that this operation leaves no scars. The frequent occurrence of scars in positions that tell of the destruction of offending hairs, as well as the form of the scar left, gives the lie to the statement.

Without entering into the details of the operation I will

take up the points that have aided me most in making the operation a perfect success.

The Needle.—The changes and modifications in the needle have shown that we did not have all that was to be desired in this important part of our apparatus.

Theoretically the needle should be so constructed that it will reach the bottom of the hair follicle and come in contact with the papilla without doing violence to the tissues, and finally to be so arranged that the current will exert its electrolytic affects only at the point of contact with the papilla. Practically this is impossible; but in this direction much more has been accomplished than would seem possible.

I early discovered that a blunt-pointed needle was much better than a sharp one, and a thin one, than a thick one.

After a long series of experiments I came to the conclusion that steel was the only material that would give us a needle of sufficient tenuity, and yet have the strength and rigidity to accomplish the desired result.

The best material for the needle is found in the jeweler's broach. This is ground to a diameter from a one two-hundredth to the three two-hundredths of an inch. From the point to a space of one-sixteenth of an inch back it should be slightly thicker than the shaft; although this bulbous point is of advantage, it is not an absolute necessity. The point of the needle is the main thing, and it should represent as nearly as possible a hemisphere. A conical point should never be used, because of the danger of piercing the walls of the hair follicle.

The temper of the jeweler's broach of necessity renders the steel exceedingly brittle, and it had been found of advantage to draw the temper in order to prevent breakage of the needle. This is best accomplished by taking a glass tube of about one-fourth inch in diameter and closing one end, and introducing the needle into the closed tube. This is then held in the flame of an alcohol lamp or Bunsen burner until the tube begins to become slightly red, when it is put aside to cool with the needle in it. When cold the needle will be found to have had its temper drawn so that it can be bent at right-angles and straightened again without breaking. It is still quite rigid enough for our purpose. Should the attempt be made to heat needles as thin as those described in the naked flame, they will take fire and burn, thus completely destroying their usefulness. I present for your consideration some needles prepared as I have directed, and furnished by the McIntosh Battery and Optical Company of Chicago.

It has been with great difficulty that I have been enabled to have the needles manufactured of the diameter given in this paper. While the shape was easily obtained and the finish of the needle all that could be desired, the size was, almost without exception, from three to five times too great. Before using a needle I invariably examine it with a lens of three-fourths inch focus in order to see that the point is the proper shape. If the shape is not as it should be, another needle is selected. My experience has been that I could ill afford to work with a needle that was not as it should be. I have found that a needle bent at an angle varying from 45 to 90 degrees from two- to three-eighths of an inch from its point, serves my purpose better than a straight one. All things considered, we accomplish our best results with the thinnest needle.

The Current.—The strength of current required varies from three-fourths of a milliampére to a milliampére and one-half, and in rare instances possibly three milliampéres. The strength of the current, however, must of necessity be regulated by the amount of chemical action which takes place around the needle, as well as by the amount of pain produced. In this operation the chemical action produced around the needle (the negative electrode) is a much better index than the milliameter. In fact, the milliameter is all but a useless instrument in electrolytic epillation.

As a rule, the less the current the longer the time required to destroy the tissue, including the hair papilla. From three to six cells of the diamond carbon battery is usually sufficient.

The question has frequently been asked whether storage cells could be used. The reply is, that if three or four storage cells are connected in series, for tension, the current obtained from such a battery can be used. The resistance of the tissues, of the thin steel needle, of the ordinary electrode, and of the cords, are so great that our milliameter will register no greater strength of current than as though we had used the same number of Bunsen cells.

The commercial current from an Edison plant has been successfully used. The pain produced is ordinarily so great as to make its use undesirable. The Edison current has an ordinary pressure of about 110 volts. To reduce this current so that we can use it for epillation we find that the difficulty to be overcome is that with our present means of controlling the current, we reduce the amperage much faster than we do the voltage and consequently get a current of tension which is more painful than current obtained from a battery. The results of a number of observations have led me to formulate the following:

Have as little resistance in the circuit outside of the battery as possible.

A battery with large cells and large elements is preferable to one with small elements. Two cells of a storage or galvano-cautery battery are equal to about three cells of a diamond carbon battery. Where the external resistance is as great as it is in this operation it will be found that the milliameter will register about one milliampère for three diamond-carbon or two storage or galvano-cautery cells. It is thus readily seen that the current from the storage or cautery battery has been so reduced by the resistance of the body and the circuit in which it is included as to be unable to heat the needle at all. We must count the volts rather than the ampères.

The Operation.—I desire to emphasize but one or two facts, rather than to give any detailed account of the operation.

Always use care in introducing the needle, and see that it follows the hair closely.

Do not carry the current so long as to produce a lesion that will form a scar on healing.

If the needle is arrested before it has entered much beyond the neck of the follicle, by reason of the size and density of the hair and root sheaths, allow the current to pass until the many adhesions that may exist at the point are overcome. (It would be well in this case to cause the needle to act on the tissues on all sides of the hair.) Remove the hair and the root sheathes will come with it if the operation has been carefully done. The reintroduction of the needle in the now empty follicle is easily accomplished and if care is used the papilla will be reached without trouble and destroyed with more certainty and less destruction of tissue than as though this method had not been followed. This method is only to be used in those cases where the needle does not follow the hair to the papilla when first introduced. The re-introduction of the needle insures the destruction of a much greater percentage of hairs than where this is not done.

In conclusion, we can state that but little that is new has been added to our methods in electrolytic epillation during the past few years. The advance in this branch has been brought about by improving the apparatus at hand, rather than by the introduction of new apparatus.

(*To be Continued.*)

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SATURDAY, JANUARY 30, 1892.

PREVALENT DISEASES.

The season through which we are passing will long be notable for the unusual amount of sickness that has prevailed in Europe and all North America.

La grippe has been almost universally prevalent, striking down the young, middle-aged, and old; and always leaving its victims in a prostrate condition, from which recovery is slow and often imperfect, the patient being peculiarly susceptible to inter-current affections.

The prevalence of pneumonia and its unusual fatality is, no doubt, largely due to the influences of the influenza epidemic.

Scarlet fever, diphtheria, and measles prevail in many localities, and in some places with great virulence. These infectious maladies are ordinarily the most preventable of diseases; but on account of the existence of pro-epidemic influences their spread and fatality has been phenomenal and difficult of control.

Typhoid fever, another of the infectious class, has been very prevalent and singularly fatal during the past year. In this city alone during the year 1891 there were reported 1,993 deaths from typhoid fever. This startling announcement has caused the municipal government to put forth the most heroic efforts to obtain a better water supply for the people, and a better drainage of the river and sewers. A house-to-house sanitary inspection should be made, and this should be thorough enough to include every trap in the plumbing of all dwellings.

Physicians in country districts will do well to inspect the water supply of their patrons; this should extend to the water provided for milk-cows, which is often a fruitful source of infectious disease.

The country privy-vault is ordinarily the most uncivilized thing to be found in our enlightened country. Specifications to justify this statement are unnecessary, for all of our readers are familiar with the facts in the case, and every one knows how frequently the little house in the corner of the garden is the originator of one disease or another.

A greater work in the cause of sanitary science is not open to State Boards of Health than the bringing about of a reformation in the construction and location of country privy-vaults, and wherever it is possible bring about the introduction and common use of the earth closet.

Water from surface springs, that is highly prized and noted as being as clear as crystal, may be not only contaminated, but saturated with an imperceptible, poisonous seepage, filtered through a tortuous channel from the little garden house to the water vein that empties into the spring. Such springs are frequent originators of typhoid disease.

It should be borne in mind that typhoid pneumonia, with its characteristic continuous fever and diarrhœa, is as truly an infectious disease as typical typhoid, where the bowels alone are the seat of the malady, the lungs having become involved because of their susceptible condition.

The causes and control of epidemic diseases should have the attention of every practitioner of medicine, and the education of the people to an appreciation of the value of sanitary living and habits of life should be a part of every physician's work.

* * * *

A NATIONAL HEALTH DEPARTMENT, with its Secretary of Public Health, would be a factor and an influence of the most potent character in its instruction of the people in hygienic methods and conditions.

This measure that is now before Congress should have the active approval of every member of the American Medical Association. Every Congressman should be written to, urging his favorable attention to this very important subject. Letters of approval should also be sent to DR. C. G. COMEGYS, of Cincinnati, who is chairman of the committee appointed at the last meeting of the American Medical Association to forward this most commendable measure. SENATOR SHERMAN has introduced the bill, and will use his influence to secure its passage through the Senate, but he needs the powerful backing of an active medical profession.

The secular press is doing well in giving its approval. Some papers have published in full the petition mailed in our January 2 issue, commenting on it most favorably. This is indicative of progress and appreciation; but the good work should go on. Six thousand letters from as many physicians to MR. SHERMAN, six thousand more to members of Congress, and six thousand to DR. COMEGYS, of Cincinnati, will do the work; one or two thousand might fail. Not one less than the number named should be sent.

A MEDICAL student in Chicago was fined last week for practicing medicine without a license.

CONTAMINATION OF RIVER WATER COURSES. AN EPIDEMIC OF TYPHOID FEVER.

The excessive prevalence of fever at Lowell, and other points on the Merrimac River, has led the municipal authorities of that city to institute an investigation into the water supply, and other suspected fever causes, which has brought out some most interesting and significant revelations. The report on this subject, as made by PROFESSOR W. T. SEDGWICK, biologist to the State Board of Health of Massachusetts, appears to be an exceptionally clear and forcible document. It was published in two of the April numbers of the *Boston Medical and Surgical Journal.* After considering the relations of the excessive typhoid rate and mortality with the milk supply, and excluding that as a probable source of danger, the author fixes his attention upon the drinking-water of the city, which has for many years been chiefly drawn from the Merrimac River. The writer shows by tables that the two cities of Lowell and Lawrence, both getting water from the same river, have been grave sufferers from fever, far beyond most of the other cities of the same State. In Lowell, there were, in 1889, 85.8 deaths by typhoid fever in each 100,000 of the population, while in 1890 the rate exceeded 158, under the same census. In Lawrence, the rate was higher in 1889, 124.2 per 100,000, than in Lowell; but in 1890 it rose to a less extent than in the adjoining city, namely: to 125.4 per 100,000. The tables also show that the cities of Manchester and Haverhill, although having many climatic and general conditions in common with Lowell and Lawrence, and although suffering to some extent from fever, have not, in either 1889 or 1890, approached, even when at their worst estate, within 38.7 per 100,000 of the lowest datum above given in regard to the city of Lowell. These facts have led to the conclusion that the cause of the recent epidemic could not be discovered in any general or climatic conditions. So, too, the fact that the two cities suffering the most severely, but only in respect of typhoid fever, excluded the idea of purely local influences. But a more positive proof of the suspected infected water supply was sought for and, it is believed, obtained beyond peradventure, in the discovery of distinct typhoidal pollution of Stony Brook, an important affluent of the Merrimac. PROFESSOR SEDGWICK was enabled to locate the occurrence of fever cases in August, September and October, 1890, the excreta from which, a part of the time at least, were discharged into the stream by means of a privy so built as to overhang the water. A heliotype illustration accompanies the report, showing the grossly unsanitary privy arrangements belonging to a foundry at which one or more of the typhoid cases worked during the time when diarrhœa was an urgent symptom. The illustration shows a frame structure, built on a staging expressly designed to ensure the dropping of all excreta from the foundry workmen directly into the running water which, a few miles below, is known to be the drinking supply of thousands of fellow-citizens. A grosser or more culpable sin against the health of a populous community could scarcely be portrayed by any other wood-cut of the same dimensions—about one-third of a page in size. It is almost as outspoken a charge against the fidelity of the local health officials as if they had been visited with an indictment of the Grand Jury, and reminds us of some of the graphic outline-drawings of PRIDGEN TEALE'S primer on Dangers to Health, published about twenty years ago.

No sanitarian who is engaged in teaching or in lecturing upon the prevention of infectious disease can afford to be without a copy of this instructive picture. The point of difficulty in the proof of the propositions of the reporter is seen in the finding of the polluting cases just a little anterior in time to the outburst of the fever; and this the investigation has been apparently enabled satisfactorily to clear up by fixing the occurrence of four cases of fever along the banks of Stony Brook during a period of two months before the aggravation of the epidemic within the cities that took their water-supplies, in part, from that polluted stream. Of the precise conditions of the drinking water of Lowell during the epidemic, the author of the report cannot speak; but it is a most significant fact, as he points out, that within one month after the time of infection of one of the foundry cases, an epidemic of typhoid fever in Lowell rose very rapidly, culminated, and began to decline. Within that same month there was also the greatest mortality of any month during the year, namely, thirty deaths from typhoid fever. There was a typhoid mortality in Lowell during each one of the earlier months of the year, some of which mortality may be traceable to the earlier Stony Brook cases; the later phases of an epidemic description may have their explanation in an infection of the reservoir and supply-pipes of the city itself, and also by secondary infection from person to person, which is always a feature of typhoid epidemics.

The sluggish decline after New Year's day, 1891, registered upon the diagrams of monthly mortality is explicable by the recurrent crops of secondary infections which are inevitable to such epidemics; and the periodic fluctuations in the *weekly* mortality curve were probably due to the same kind of reinforcements. In support of this view, the author calls attention to the fact that the elevations occur at intervals, equal to the incubation-period of typhoid fever, namely, every two weeks—a fresh crop of cases springing up every fortnight.

The report concludes by saying that in the absence of any other sufficient source of contamination of the drinking water used by the people, the responsibility for the epidemic must naturally be ascribed to the undoubted infection of Stony Brook, three miles

above Lowell; and it may be remarked that the villages bordering on that brook have never, in forty years, had so many cases of fever, liable to infect the stream, as in the past two years. The fever epidemics of both Lowell and Lawrence can thus be completely and satisfactorily accounted for, as well as the constant excess of their typhoid-rate, from which both these cities have long suffered. There is, says the report, good reason to believe that the germs of the fever have been carried alive and virulent the three miles from Stony Brook to Lowell, and nine miles further, from Lowell to Lawrence; and perhaps even, under favorable condition, those germs may have been transported from Manchester, N. H., or even more distant points, arriving at Lowell alive and virulent, so that until a new source of supply shall have been obtained the water taken from the Merrimac River must be regarded as a menace to health, both constant and serious. Numerous bacteriological examinations were made of the Merrimac River water during the latter end of the epidemic; but at no time was the investigator able to isolate the bacillus of typhoid fever. It would doubtless have been different had the examinations been undertaken at an earlier stage of the stream's infection.

THE HEALTH OF VETERANS, OR TWENTY-FIVE YEARS AFTER THE WAR.

Dr. JOHN L. BILLINGS, of the army, has contributed to *The Forum*, for January, a brief study of the health of the survivors of the war, as judged by data compiled under the eleventh census. The author's intention is to show with regard to the troops of a single State, Massachusetts, what may at some future time, be worked up for the Northern States as a whole. In that State about 40,000 veterans were reported as living on the first of June, 1890. These form about one-eighth part of the white male population over forty years old. Hence, if they were all equally healthy, the number of sickness cases reported by the census should be seven times as great among the latter as among the former. But the census indicates that there is four times as much sickness among veterans as among other males of the same age. Among the insane, however, the veterans furnished a much smaller proportion than the other males over forty years of age. The sickness statistics were especially high among the veterans from diarrhœal diseases, rheumatism and heart disease. This fact might have been anticipated, and may, in part at least, be set down as one of the entailments of service in the field. DR. BILLINGS infers that while the health of some men has been improved by their war discipline —even to the extent of the preservation of lives that would have been lost if their owners had remained at home—the health of the average has been impaired by the exposures of the soldier's life. The veteran has a greater number of days of sickness than other men of the like age-period, and of course, has a somewhat less expectation of life. This conclusion, being based on the census results for a comparatively small territory is not regarded by DR. BILLINGS as other than a provisional one. Fuller data may considerably modify these inferences. It is not impossible also that the replies obtained by the census gatherers may have taken into account the minor pains and disorders of veterans and pensioners, which other men might not mention. This would be likely to apply with especial pertinence to those men who are applicants for pension relief.

HEALTH OFFICER OF THE PORT OF NEW YORK, DR. JENKINS.—Dr. W. T. Jenkins, of New York City, has been elected to succeed Dr. Wm. M. Smith, at the Quarantine Station in the harbor of New York. Dr. Smith has been holding over for about ten years, by reason of the inability of the State Senators to agree to the nominations made by successive Governors. The office is now a salaried one worth $10,000 per annum. When it was a fee-office, the income was estimated to be from $75,000 to $95,000 annually.

REPORT OF A CONFERENCE OF STATE AND MUNICIPAL BOARDS OF HEALTH HELD AT CHICAGO, THURSDAY, JANUARY 14, 1892.

In response to a suggestion of the State Board of Health of Pennsylvania, a conference of State and Municipal Boards of Health took place at the Grand Pacific Hotel, Chicago, Thursday, January 14, at 10:30 A. M.

Present, the following Secretaries or representatives of State Boards of Health: C. N. Hewitt, Minnesota; H. B. Baker, Michigan; C. D. Smith, Maine; F. W. Reilly, Illinois; M. O'Brien, Kansas; J. T. Reeve, Wisconsin; H. H. Clark, Iowa; Benjamin Lee, Pennsylvania; Dr. J. H. Rauch, representing the American Public Health Association; Dr. S. P. Wise, Ohio. The following representatives of Municipal Boards of Health and cities: Hon. Peter Rush, Comptroller of Detroit; Dr. McShane, Health Commissioner of Baltimore; John D. Ware, Health Commissioner, Chicago; D. S. Shellaberger, Health Commissioner, Sioux City; Dr. O. B. Wingate, Health Commissioner, Milwaukee; Dr. Jamin Strong, Health Commissioner, Cleveland, Ohio; J. H. Kellogg, Secretary State Board of Health, Michigan; Dr. C. McLellan, delegate from Provincial Board of Health of Ontario.

Letters or telegrams were received from the Secretaries of fifteen State Boards of Health and the Boards of Health of eight cities regretting their inability to be present, expressing their sympathy with the movement, and promising the hearty coöperation of their respective bodies in any plan which might be determined on by the conference.

On motion of Dr. Benjamin Lee, Dr. John H. Rauch was called to the chair. Dr. Lee was elected Secretary. The Chairman called upon Dr. Lee to state the objects of the meeting. Dr. Lee complied with the request by reading a copy of a letter from Dr. Rauch to the Hon. Director-General of the Exposition, as follows:

COLONNADE HOTEL, PHILADELPHIA, PA.,
Jan. 7, 1892.

HON. GEORGE R. DAVIS, Director-General, Columbian Exposition, Chicago, Ills.:

Dear Sir:—His Excellency, the Governor of Pennsylvania, desiring to have the interests of his State presented in the fullest manner at the World's Columbian Exposition, communicated with Dr. Benjamin Lee, Secretary of the State Board of Health, requesting that the work of the Sanitary Department of the Commonwealth shall be brought to the attention of the public on that occasion in some fitting way.

Dr. Lee, feeling that the exhibit or presentation of a single State or Board would not be of sufficient interest and importance to attract general attention, considered it expedient to communicate with the Secretaries of State and Municipal Boards of Health and with myself, as Chairman of the Committee of the American Public Health Association, to coöperate with the Exposition Commission, with a view to obtaining such a general presentation of the organization and methods of the various sanitary bodies of the country, as would be both interesting and profitable.

As a result of this interchange of views, it has been decided to hold a conference of sanitarians, generally representative of official bodies, at Chicago, on Thursday, January 14, 1892. I feel it to be important that your commission should participate in this meeting, and trust you will be represented. It will be held at the Grand Pacific Hotel, and will convene at 10 A.M.

I find a very considerable degree of interest already awakened in the Exposition in this State. Very truly yours,

(Signed) JOHN H. RAUCH.

To the above letter the following reply was received:

OFFICE OF THE WORLD'S COLUMBIAN EXPOSITION,
CHICAGO, Jan. 11, 1892.

DR. JOHN H. RAUCH, Springfield, Ills.:

Sir:—I am in receipt of your favor of January 7, advising me of the proposed conference of Sanitarians at Chicago, January 14, 1892, and I shall take pleasure in arranging to have some representative of the Exposition present at the meeting.

I have referred your letter to Dr. S. H. Peabody, Chief of the Department of Liberal Arts, with the request that he give it his personal attention.

Thanking you for your interest in this branch of Exposition work, I am, very respectfully yours,

(Signed) GEORGE R. DAVIS, Director-General.

Dr. Lee considered that the above letters stated succinctly but sufficiently the objects of the conference. When called upon by the Governor of his State for a sanitary exhibit, he had felt entirely at a loss as to what suggestions to make. Since coming to Chicago, he had conversed with members of other Boards, and found that they had experienced the same difficulty. Interviews had taken place between Dr. Rauch and himself and President Baker of the Exposition, the President of the Department of Liberal Arts, and the President of the Department of Auxiliary Congresses, which showed that, while those who were commercially interested in sanitary appliances had been prompt in their applications for space, so that there would be a complete and valuable exhibit of such articles, the scientific aspect of sanitary work had as yet received little attention. He felt convinced that the officers of the Exposition would be only too glad to have the aid of this conference in organizing that branch of the exhibition.

Dr. Hewitt stated briefly the work done by the committee of the American Public Health Association, in this connection, up to the present time. He considered it important that this conference should work entirely in harmony with that committee. Discussion followed as to the method of raising funds for the purpose of the exhibit in each State, which was participated in by Drs. O'Brien, H. B. Baker and Smith. The chairman stated that President Baker had courteously offered the use of the Directors' room for the meeting, and some of the officers had accepted an invitation to be present. As the time fixed for the meeting there had already passed, he suggested that it would be well to adjourn to that place. On motion, the conference therefore adjourned to meet at once in the Directors' room. On reassembling, the chairman presented a copy of the official organization and schedule of exhibits of the Exposition, and at his request, that portion which referred to hygiene and sanitation was read by Dr. McShane, of Baltimore. The chairman also presented a copy of the schedule of exhibits of the Museum of Hygiene, held in connection with the meeting of the American Public Health Association in Brooklyn. Dr. Peabody, chairman of the Department of the Liberal Arts, having arrived, was presented to the conference, and expressed his satisfaction that the sanitary officials of the country were coming to his aid in this important department, and his readiness to answer any questions that the members might suggest.

On behalf of the Director-General, he extended a courteous invitation to the members to visit the Exposition grounds under his guidance, which was accepted with thanks.

Dr. Peabody stated that he had as yet insufficient data for determining what space would be needed for the sanitary exhibit, and hoped to have some definite advice from this body on that point. The classification at present adopted offers all essential matters, but is opened to the rearrangement, on which also he would be glad to have suggestions. Dr. Baker inquired whether the opportunity would be offered for the exhibition of illustrated charts. Dr. Peabody replied that this was the most important part of the entire work, and although not mentioned directly in the catalogue, space would certainly be allowed. In the Educational Department, cards 22×28 inches in size would be used. These would be arranged in alcoves so that they could easily be read; cards would

also be exhibited on winged frames. He considered it a matter of essential importance that there should be a collective sanitary exhibit, as distinct from the exhibits of the several States. Dr. Hewitt suggested that while the exhibit of sanitary appliances should be distinct from that of Boards of Health, yet it would be well to have it as nearly as possible in the same location. He also suggested that an exhibit of the progress of bacteriological examinations and processes would be of great interest to the public. As these were perishable in their nature, he desired to know at what time during the Exposition they could be presented. Dr. Peabody replied that it would be desirable to have successive exhibits of this kind during the entire exhibition. Experts might be appointed by the different physiological and hygienic laboratories throughout the country, to supervise and explain the demonstrations. On motion of Dr. Lee, it was resolved that this conference desires to coöperate in the fullest manner with the committee of the American Public Health Association on the World's Columbian Exposition. On motion of Dr. H. B. Baker, it was resolved that it is the sense of this conference, that there should be a *collective exhibit* of the work of State and municipal Boards of Health.

On motion of Dr. Smith, it was resolved that a committee of such number as the chairman may deem expedient be appointed, to formulate a uniform plan for demonstrating the organization, methods and results of State and Municipal Boards of Health and to report the same to each member of the conference and to all Boards of Health interested in the movement.

On motion the conference then adjourned.

(Signed) BENJAMIN LEE, Secretary.

NOTE: At the annual meeting of the American Public Health Association held at Kansas City, Mo., Oct. 20–23, 1891, the following resolution was adopted:

Resolved, That this Association will hold its meeting in 1893, in the city of Chicago, and that so far as possible, the occasion be made an International Congress of Hygiene and Public Health.

The following is the committee appointed for the meeting of 1893, under the above resolution:

Dr. John H. Rauch, Chicago, Ill.; Dr. A. N. Bell, Brooklyn, N. Y.; Dr. Samuel Abbott, Wakefield, Mass.; Dr. Peter H. Bryce, Toronto, Canada; Dr. Charles N. Hewitt, Red Wing, Minn.; Dr. Lucien F. Salomon, New Orleans, La.; Dr. H. D. Fraser, Charleston, S. C.

The following is the committee appointed by Dr. Rauch to formulate a uniform plan of exhibit:

Dr. Benjamin Lee, Sec'y State Board of Health of Pennsylvania, Chairman; Dr. H. B. Baker, Secretary State Board of Health, Mich.; Dr. Franklin Staples, President of Minnesota State Board of Health; Dr. J. T. Reeve, Secretary Wisconsin State Board of Health; Dr. J. D. Kennedy, Secretary Iowa State Board of Health; Dr. F. W. Reilly, Secretary Illinois State Board of Health; Dr. C. N. Metcalf, Secretary Indiana State Board of Health; Dr. Wm. H. Ford, President Board of Health, city of Philadelphia; Dr. O. W. Wingate, Health Commissioner of the city of Milwaukee; Dr. J. D. Ware, Health Commissioner city of Chicago.

PERCENTUM SOLUTIONS IN PHARMACY.—Perhaps because few physicians are in the habit of prescribing solutions of percentage strength, a difference between medical and pharmaceutical arithmetic in this respect seems to have generally escaped notice. The physician will probably suppose that in prescribing 48 grains of a soluble salt to a fluid ounce [480 minims] of a dissolving menstruum he is ordering a ten percentum mixture; but if he write simply for a fluid-ounce of a 10% solution, he (or rather his patient) will usually get but 45.6 grains of the medicament. This not inconsiderable discrepancy arises from the apparently common pharmaceutic practice of reckoning a fluid-ounce by weight, instead of by measure, as 456 grains, and computing percentages on the latter basis. For example: A well-known firm of manufacturing chemists label their tablets of cocaine muriate with the information that "each tablet contains 2¼ grains, . . . or the required quantity to form, with 1 fluid drachm [57 grains] of water, a 4% solution of the salt." Without dwelling on the minor circumstance that 4% of 57 is 2.28 instead of 2.25, it is evident that since we measure our dosage (especially for subcutaneous injections) by minims, not by grains, one of these tablets in our 60-minim drachm gives us a 3.75% instead of a 4% solution. Of course, as the quantity and strength of the solution are increased, the deficit becomes greater; the difference between the two methods of estimating a fluid-ounce of a 20% solution amounting to nearly 5 grains of the salt. Many similar instances might be cited, and on the score of accuracy it might be further suggested that the stated weight of a fluid-ounce applies only to distilled water at a fraction over 39° Fahr. Enough, however, has been said if the attention of physicians be directed to the importance of calculating for themselves whether the manufacturer's dosage of potent drugs be that which they wish to administer.—ALFRED L. CARROLL, M.D., 30 West 59th street, New York.

DOMESTIC CORRESPONDENCE.

Tuberculocidin; or, Professor Klebs' Modification of Koch's Tuberculin.

To the Editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:

Sir:—With a supply of this substance recently received by me from Prof. Klebs, he gives the following instructions as to its use and action: The beginning dose to be from two to five milligrams, and the increase to be rapid up to one, and subsequently to two, four, six, and eight centigrams.

Hectic fever is no contra-indication; in fact, the temperature rapidly decreases and the local conditions improve.

The preparation causes absolutely no fever in tubercular patients, and increasing fever when present is an indication for increasing doses.

The remedy is given daily, and when large doses are reached they are divided, half being given in the morning and the other half in the evening.

The disintegration of the bacilli becomes manifest after five to ten of the larger doses have been given. Cough and

expectoration diminish and disappear rapidly, and a gain in weight and strength soon follows.

From Prof. Klebs' statement it would appear that tuberculocidin can be employed in cases where heretofore Koch's tuberculin was contra-indicated. The therapeutical effects claimed are identical with those heretofore observed by myself and others from Koch's preparation, obtainable, however, with much smaller doses, of from one-tenth to five milligrams.

With the necessary care Koch's tuberculin is entirely free from disagreeable symptoms, the same as Prof. Klebs' modification is claimed to be, and until the new substance can be produced so that the price, which now amounts to from $1 to $2.50 per average dose, is greatly reduced, there seems little need for its substitution, unless as an only and last resort in cases with high fever and otherwise very active progressing disease.

Even in such, I doubt the wisdom of so rapidly increased and large doses, and, in view of the experience of a year ago, with Koch's remedy, which was then given in what we now know to have been overdoses, I would caution against a repetition of the same blunders.

The impossible is not going to happen even from the employment of the Klebs' tuberculocidin, and, without doubt, we must still hold fast to the principles of nutrition and climatic influences, or eventually realize disappointment.

In the meanwhile, a cautious trial of the modified substance would seem proper only under every possible precaution, and I trust that Prof. Klebs may have led us one step further in the treatment of tuberculosis.

KARL VON RUCK, M.D.

Asheville, N. C., Jan. 14, 1892.

To the Editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION:

Sir:—In justice to those who participated in the discussion of the American Electro-Therapeutic Association, your readers should be informed that the stenographer's report was not revised or corrected before being published, which accounts for the many gross errors in the transactions as published in the JOURNAL. In many instances the errors are unmistakably typographical, and can be overlooked; but there are some errors of omissions which completely prevent the meaning.

In the issue of January 9 the report has misrepresented my remarks in many respects. For instance, I never said Apostoli used an electrode in the uterus the size of an orange; but may have said it was the size of my thumb. Nor did I say that I had abandoned puncture. I am a strong advocate of vaginal puncture, but said I had abandoned *abdominal* puncture.

I have written previously correcting some errors in my own remarks in another issue, but for some reason my letter was not published. Respectfully, A. H. GOELET.

New York, Jan. 18, 1892.

[In explanation of the above we have to state that the report of The American Electro-Therapeutic Association was furnished the JOURNAL by the President of that association, and published as revised by him.—EDITOR.]

SELECTIONS.

FURTHER CONSIDERATION OF THE ANALYSIS OF RECORDED CASES OF PHTHISIS PULMONALIS.—In the summer of 1889 I presented to the Colorado State Medical Society an analysis of one hundred recorded cases, showing the effects of the climate of Colorado upon cases of phthisis pulmonalis, from which analysis I drew the following conclusions: "Taking cases as they come to us, we can expect improvement in two out of three; that men do better than women, as in fact they do anywhere; that persons over twenty years of age do better than under twenty, and that over thirty years of age do still better; that heredity, however, is no bar to a person's coming to Colorado, but that the more indirect the inheritance the better are his chances. Nor should a hæmorrhagic tendency debar one from coming, as such cases do admirably well; that altitude *per se* is not a producer of hæmorrhage: that the chances of obtaining an arrest of the trouble are improved by the patient's possessing a sound digestion, a good appetite, and a pulse and temperature not much raised above the normal; and that patients in the early stages of the disease, especially if their digestion be sound, appetite good, and pulse and temperature nearly normal, are the fittest subjects for our climate, whether they have any hereditary tendency or not."

Very singularly my conclusions were corroborated by Dr. Solly, of Colorado Springs, in an article read before this association at its last annual meeting. From the analysis of one hundred and forty-one cases, coming under his observation, he likewise concluded that two out of three cases coming to Colorado received benefit, which result was all the more gratifying, as his work was entirely independent of mine.

Two years and three months have now passed by since I made my report, and it is my wish at this present time, so far as I am able, to bring my report down to date; an undertaking which I approach with some hesitancy, because of a dread that, after all, however conscientiously I may analyze the cases, my results may not do full justice to the curative effects of the Colorado climate.

At the time of my previous report I concluded that, of my one hundred cases, 50 per cent. were very much benefited by our climate; that there was 17 per cent. additional of persons who showed improvement, although not equal to that of the first class; making in all, as it seemed to me, 67 per cent. of cases that received a benefit by coming to Colorado. Of the remaining thirty-three cases twenty-seven had died, and seven seemed to be positively worse than they were on coming. The intervening time of two years has simplified matters somewhat for me, as, so far as I have been able to follow the cases, I see either a positive improvement or a positive retrogression. Out of my one hundred cases, at the time of my present report, I know of forty-three deaths. There are twenty-four additional cases of which my knowledge does not extend up to date, leaving me with thirty-three now living, of whose condition I can speak with a certain degree of assurance.

If, now, we take the thirty-three cases, I find that thirty-two of them are so much improved that they have been able to take up the burdens of life again, either in Colorado or in their former locations, and so might fairly be classed under the heading of cured, according to the definition of Williams and other writers. The remaining one case is in a somewhat worse condition than when he came to Colorado, he being amongst the class that I formerly spoke of as somewhat improved; but, to offset his condition, I find that one whom I formerly classed as worse, is to-day very much improved.

Of the thirty-two, whose condition is improved, ten are now living at or near sea-level, and, so far as I can learn of their condition, are not showing any recurrence of symptoms, or experiencing much inconvenience, a fact which is of exceeding interest as demonstrating a point on which the profession is as yet divided, namely, with reference to the advisability of patients who have received an arrest of their trouble in Colorado, returning to lower elevations. It hardly seems fair to me to class all of the thirty-two as cured, for, despite the fact that they are actively engaged in the duties

of life, in some instances there are yet remaining cough and physical signs. Six of my list can be classed under this head, who, though able to work, are nevertheless occasionally subject to a recurrence of their symptoms, and at all times have to exercise a certain amount of caution. The remaining twenty-six, it seems, can be fairly spoken of as cases of cured, cases in regard to whom most persons would scarcely presume that they had ever had any pulmonary trouble, and who are able to go about their duties like other men.

If, then, we speak of 26 per cent. as the ratio of cured to be obtained from a residence in Colorado climate, it seems to me that we would hardly be doing the climate justice, inasmuch as some of the cases that have passed from our observation were, at the time they were last seen, such as might be fairly classed under the heading of cured. Of this number I can now recall six, which will bring my percentage up to 32 per cent., a ratio which I find is again confirmed by Dr. Solly's experience, as stated in his report to the Colorado State Medical Society, at its last annual session, and which is furthermore in accord with the results recorded by others, as the ratio of cures that may be expected from treatment in high altitude resorts.

In passing it may be admissible for me to state that of the twenty-four cases that have passed from my observation, I regarded the condition of twenty-two as very much improved, when last seen, and of six as so markedly improved as to warrant a return to their homes, and hence I have spoken of them as cured. So, if I should add these twenty-two cases to the thirty-two now under observation, and whose condition is very markedly improved, it would bring my percentage of benefited cases up to 54, which, while it is somewhat less than the percentage which I had obtained on a previous analysis, will probably come nearer a fair statement of the case.

Of the forty-three who have died, two were doing remarkably well until attacked with an intercurrent disease which carried them off, leaving forty-one cases that in my best judgment died of their pulmonary trouble.

An analysis of the forty-three cases shows the following results, which, it seems to me, will convey some impression of the effect of the climate of Colorado upon pulmonary trouble, and, in a somewhat negative way to be sure, will illustrate the class of cases that are suited to this climate.

With reference to the sex of patients, I find that of my one hundred cases fourteen were women, and of these eight died, leaving six unaccounted for, but much improved. Of these, three are to-day living in the East, and doing very well; one is in Colorado, apparently cured of pulmonary disease, and two I have lost sight of. To reduce this to a percentage, it makes about 57 per cent. of the female patients who have died, as against 40 per cent. of the male; seeming to indicate, as my previous analysis did, that women do not do quite so well in this climate as men do, a result which probably will hold wherever pulmonary disease is treated.

With reference to the age of the patients, of the forty-three who have died three were under twenty years of age, making a percentage of 100 of all my patients under twenty at the time of my first examination.

Between	20 and 30	there were	20	deaths,	a ratio of	37.7	per cent.
"	30 and 40	"	15	"	"	46.8	"
"	40 and 50	"	4	"	"	50	"
Over	50	" was	1	death,	"	25	"

which leaves me to infer that patients have a greater recuperative power and do better if the disease takes them between twenty and thirty than if it comes upon them when they are between thirty and forty, and that they do better in that decade than they do between forty and fifty; in other words, that under twenty they do not do well, and between twenty and fifty the chances diminish as they get older, a result which is not altogether in accord with my previous observations.

With reference to the question of inheritance, I find there were ten in whom there is a history of one or both parents having been affected with pulmonary trouble, one who had one or both grandparents affected, three who had uncles or aunts, seven who had brothers or sisters, and twenty-two in whom there was no history of inheritance; which goes to show that of the forty-three deaths twenty-one had a history of inheritance and twenty-two had not, making it about 50 per cent. in each case.

If, now, we compare the results with the full table of one hundred cases, I find that of the cases who had a history of inheritance when they came under my care, 40.7 per cent. of them died; whereas, of the cases who had no history of inheritance at the time of coming under my care, 45.8 per cent. have died, a result which goes to confirm my previous observation that heredity is no drawback to a person's coming to Colorado.

As regards hæmorrhages: Of my total number of one hundred cases forty-four had a history of having had one hæmorrhage or more previous to coming to Colorado. I find that of the forty-three deaths, ten of them can be directly attributed to hæmorrhage, and of these ten it occurred in two cases where there had never been any previous history of hæmorrhage. This would make a percentage of 18.6 of such persons who came to Colorado with previous histories, which goes very conclusively to prove the statement made in my previous article, that this climate is not a producer of hæmorrhage, and that, contrary to a somewhat general belief, hæmorrhagic cases do admirably well here, a result which is confirmed by the observations of Dr. Jacob Reed, Jr., of Colorado Springs, as is outlined in an article read before the Colorado State Medical Society several years ago.

I find that of the forty-three cases who have died, in eleven the appetite is stated as having been very good, fair in another eleven, and positively bad or wanting in twenty-one. The digestion was very much impaired in twenty, and the action of the bowels irregular in fifteen, which would lend some credence to the belief that the condition of the patient as regards perfect or imperfect assimilation is a very considerable factor in the prognosis, those doing best where the appetite is good, the digestion perfect, and the bowels regular: and, on the other hand, those doing poorly where the appetite is wanting and digestion imperfect.

As regards pulse and temperature of the forty-three fatal cases, there were twenty-three in whom the pulse ran from 100 to 130 per minute and whose temperature was from 100° to 104.2° at the time they first came under my observation. In six of the cases the records are wanting, whereas of the remaining cases the temperature and pulse varied but slightly from the normal, showing that irritability of temperament, as indicated by temperature and pulse, is an unfavorable indication with reference to prognosis.

With reference to the condition of the lungs at the time of coming under my observation, I find that of the forty-three cases, thirteen may be classed as having been in the first stage of the disease, nine in the second, and twenty-one in the third, a result which is in accord with the usual experience that high altitude treatment is better adapted to persons in the earlier than the later stages of the disease, especially if the slight amount of trouble be accompanied by good digestion and very little nervous irritability, as shown by the temperature and pulse.

The results as a whole, it seems to me, can fairly be taken as corroborative of the conclusion that I drew from my previous analysis, which conclusion I have quoted at the opening of this article.—S. A. Fisk, M.D., in *The Climatologist*.

PYOGENIC MICROBES OF LOWER ANIMALS.—Mr. S. Whitbick reported the following among other results obtained during his investigation of the microbes found in the pus occurring in lower animals. Staphylococcus pyogenes aureus was isolated in pus from a deep-seated abscess in the neck of a horse. Staphylococcus pyogenes citreus was obtained from a "fistula of a horse." The bacillus pyocyaneus was isolated from an open synovial bursa of a horse. In the liver of a horse, that had died of septic poisoning, the pyogenes fœtidus was found. His conclusions are that the bacillus pyocyaneus was the most malignant germ of those isolated, while the staphylococcus pyogenes aureus was the most common form.—*The Vis Medicatrix*, December, 1891.

HYGIENE AND DIETETICS OF THE ARTHRITIC.—In the December number of *The Physician and Surgeon*, Dr. Lucas Championnière, in the course of an able article upon this subject, deduces the following rules as to the best diet to be ordered for the patient. The author says that for those suffering from *pronounced* arthritis who are very *lithæmic*, preference should be given to white meats, veal and young animals, mutton, and lastly beef. In some cases, however, game or venison should be denied. If fish be ordered, the white-meated is best, as we find it in the sole, haddock, or codfish, while such colored or oily flesh as in the salmon, eel, mackerel, or sturgeon had best be avoided. Shellfish and crustacea, while nutritious, the author considers as too compact in their tissues, and hence indigestible, and on this account inadvisable for the arthritic.

Peas and beans yield a considerable amount of nitrogenous matter, but, strange to say, do not seem to form uric acid. The fruit-acids become alkaline in the system, and these two classes the author advises in the diet table.

As to liquids, Dr. Championnière considers water especially good for the gouty. Some writers have gone so far as to say that this article alone is sufficient for a cure. Water increases the excretion of urea, and it is proven that the production of uric acid is in indirect ratio to the formation of urea, hence the more water the patient consumes the less uric acid is formed. Finally, water aids in the elimination of all waste organic products, and in the dissolution of the fatty acids which constitute gall-stones. A dry diet, it is thus seen, is rather a dangerous one for the arthritic.

As to wines the author advises very light varieties. Alcoholic wines and champagne especially are most injurious.

The following rules are held to be applicable in every case:

See that the arthritic patient produces and absorbs the least possible amount of organic poison which, by irritating the less resisting connective tissue, would cause arthritic manifestations.

Modify the arthritic diathesis as far as possible by means of exercise, gymnastics, hydrotherapy, massage, etc.

Attend to the amount and quality of the food; hasten nutritive changes; facilitate elimination of all organic waste and toxines by stimulation of the emunctories, which are usually unreliable in arthritic patients.

THE CONFORMATION OF THE SKULL.—The conformation of the skull has always been a fruitful theme for discussion, relative to the cerebral development and its functions. Some time since, Bullen made an investigation of the skulls of 1,565 patients who had died at the Wakefield Asylum. He says that the irregularities of the cranium have been frequently noticed, but the main one has been that of lack of symmetry. Of the entire number of cases examined, more than 100 had some form of irregularity. The large skull—either square or circular—is met with oftenest in maniacs. The elongated occurs more frequently in cases of general paralysis and epilepsy; and those cases in which the vault resembled a dome were found particularly in cases of mania, and some cases of general paralysis. In cases of melancholia, there seemed to be a special development of the frontal region, while in syphilis a lack of development in the frontal region was the most striking feature.

The anomalies in shape which would seem to indicate an inferior condition, were found in totally different cases; as, for instance, in imbeciles and others where there was normal development of the faculties. Lack of symmetry was found in 20 per cent. of all the cases examined, and was demonstrated by some anomaly in the conformation of the frontal, parietal or occipital regions, manifested by a diminution of capacity of the sides of the skull, or by a kind of torsion, by which one side advanced forward more than the other. The first variety, that in which there existed a local malformation, was found in 40 per cent. of all cases in which lack of symmetry was found, and it occurred on the left side twice as often as on the right. The temporo-parietal and parieto-occipital region presented 30 per cent. of these malformations, the majority being, as with the others, on the left side, although the cases in which the projection of the right frontal region over the cranial anomaly was just double that of the left. The capacity of one-half of the skull cavity was increased in 50 per cent. of the cases, the majority being on the right side, and when the right side was more voluminous, there was observed a superiority of the frontal region of the same side, and coincident with a superiority of the temporo-parietal region of the left side. This lack of symmetry was greatest amongst cases of chronic melancholia, next in epilepsy, and least amongst those of general paralysis. The capacity of each half of the skull did not always correspond with the size of its cerebral hemispheres; in fact, a small cerebral hemisphere often occupied a comparatively bare half of the cranium. In a series of twenty-nine cases of dementia, the right hemisphere was the larger fourteen times out of twenty-three, while the diminution in the capacity of the right side of the skull occurred seventeen times to twelve of the left side. In twelve of these cases only did each half of the skull correspond in size to the cerebral hemisphere.

The author also examined the membranes, convolutions, blood-vessels, etc., and gives an interesting array of figures for the different mental affections and different ages.—*Journal of Nervous and Mental Disease.*

ON THE ETIOLOGY OF PERIPHERAL FACIAL PARALYSIS.—Dr. S. Goldfan (*Neurolog. Centralbl.*, Vol. xvi). The author considers four cases of facial paralysis occurring in syphilitic subjects; the symptoms referable to the facial nerve coming on a very short time after the primary lesion—that is, before or during the stage of roseola. The symptoms presented themselves in the first case in thirty-five days; in the second, in three months; in the third, in fifteen days: and in the fourth, in twenty days. In one of the cases, an ordinary attributable cause was present, namely: exposure to cold; but this was very slight. In the second the patient, an actor, had simulated toothache on the stage the evening before, pressing against the side of his face with his handkerchief. In the remaining two cases, no attributable cause could be assigned. Facial paralysis occurring during the third stage of syphilis is ordinarily not a difficult matter to explain, for it may be due to gummata, basal meningitis, periostitis, exostosis, caries of the petrous portion of the bone, or changes in the trunk of the nerve itself; but the author finds it difficult to explain how it occurs in cases where all these factors can be ruled out. Lang's hypothesis, that is, that during the appearance of the syphilitic exanthem, there is a coincident infiltration into the basal meninges, or the central nervous system itself, which is sufficient to account for the peripheral paralysis. This the author considers un-

tenable. The only light he can throw on the problem, is expressed by saying that under the influence of the syphilitic infection, and in the very early stages of the disease, particularly during the period of eruption, there exists a marked disposition on the part of the facial nerves to peripheral inflammation and paralysis.—*Journal of Nervous and Mental Disease.*

A Secretary of Public Health.—The petition put forth by a committee of the American Medical Association, praying Congress to establish a Department of Public Health, is an able and interesting document. It ought to make some impression upon our legislators at Washington.

The petition acknowledges the work in public health done by the various existing departments of the Government; it describes the field occupied by State medicine. It skilfully touches upon the subject of "medical "schools" in the following way:

"The question," it says, "may arise with some person, whether such a department would subserve the interests of any particular school? We respectfully reply that amid all the apparent disparity in medical practice, there is one true, severe unity, and to attain this all true physicians are continually striving. There is no disputation in medical science about anatomy, physiology, pathology, chemistry, physics, or preventive medicine; the difference among doctors lies in therapeutics or the treatment of disease, and as in the past, so for all the future, practitioners will use a variety of remedies and in varying quantities, and there will be different modes of management of sick or injured people. With the advance in the way of education, the differences in treatment will gradually become more unified."

It recognizes the fact that the General Government's powers would be limited in many ways, but believes that the field would be large enough.

A Secretary of Public Health, we are assured, would represent the medical consciousness of the Nation, and "become one to whom we could look for the exploitation of measures that will direct continuous scientific and collective investigation in regard to endemic, contagious, and other diseases; the enlightenment of the people in sanitary ways of living; the dissemination of information respecting the most favorable places of residence for those afflicted with such chronic diseases as asthma, rheumatism, neuralgia, and consumption; the examination of food and drinks; medicinal springs; the collection and tabulation of vital statistics at large and in various localities, such as the congested areas of our great cities and among various races. He would be able to coöperate with State Boards of Health, the Signal Service, the medical departments of the Army, Navy, and Marine Service, unify and utilize their work, and thus make the Department of Public Health the repository of the most important facts that concern the comfort of the people; and his duties will grow broader and stronger in adaptability to public needs."

A Secretary of Public Health, to put the matter in few words, could, as an officer of the National Government, deal executively only with the subject of national quarantine. All his other functions would have to be those of an adviser, teacher, investigator, and coöperator. But such an advisor and investigator, with the power and dignity of the Government behind him, would wield an enormous influence for good. The establishment of such an office would at once attract such attention to hygiene, and give such prominence to its work, that advances in the education of the people and the promotion of sanitary reform would take place much more rapidly. Very few people yet understand that there is no reason why such things as measles, scarlet fever, yellow fever, diphtheria, or cholera should exist, and that in time civilized communities will stamp them out.—*N. Y. Med. Record.*

Professor Pancoast on Influenza.—"La Grippe" is not a proper name for the disease, as that is simply the name of influenza in France, and especially in Paris, where the name originated; it is more than influenza, it is a malarial break-bone fever. It is called "la grippe" because, like the influenza, it takes one suddenly; and it is a sort of blood-poisoning caused by malaria. The poison is a microcosm, which produces malaria; this microcosm is now frequently spoken of.

The great prostration and the pains in the extremities, in the limbs, deep-seated pains in the limbs and bones, make it resemble the malarial fever of the mountains of South Carolina, called the Dengue, or break-bone fever, which, like this malarial influenza, leaves the patient very much prostrated. One of the great elements of the disease which we have to combat, is the prostration and consequent debility of the patient. In my surgical operations I have had to combat it, and many cases have been taken with the "grippe" in bed without any possibility of contagion. I do not believe it is a contagious disease, but it is an epidemic simply; there must be a receptivity in the individual, an exhaustion or fatigue, which predisposes him to disease, and thus renders him liable to the action of the microcosm floating in the atmosphere. I feel fully persuaded that it is not a contagious disease, for some of my surgical patients have been taken suddenly in bed with it, being confined there by an operation, and have not been exposed to it by contact with any one suffering from the influenza.

In addition, I have noticed that while the influenza has been prevailing, the inflammatory and surgical diseases which I have been treating seemed to take on a low type of inflammation, and I have found it necessary, at these times, more than usually, to give tonics to build up my patients, and to keep up their tone.

I am also in the habit of telling my patients who are able to walk about, to talk good care of themselves, so that they would not catch the influenza, nor suffer from the epidemic. By making him take care of his health, by keeping up his health, by keeping up his strength, and taking a tonic, if necessary, and attending to the secretions and taking exercise in the open air, by keeping up his tone, the patient is able to resist the epidemic poison. By keeping up their strength and taking exercise in the open air and keeping their health in the best condition, they are able to resist the epidemic and are able to throw it off more easily if attacked; but if debilitated or run down, they develop a condition of receptivity for the poison which renders them easy victims. —*The Times and Register.*

The Characters of the Present Pandemic of Influenza.—According to observations made at recent meetings of the Berlin Medical Society, it would seem that the epidemic of influenza began there during the first week of November, the earliest cases admitted into hospital having come under treatment on November 7. Rehemann stated that the most noticeable difference between this and other recent epidemics has been the large number of women and children, and the small number of outdoor workers attacked. Guttmann mentioned an instance in which the admission of a single patient suffering from influenza was shortly followed by the occurrence of thirteen fresh cases. Fränkel, who took notes of 138 cases, found that only nine (6.5 per cent.) had suffered from the disease before. The chief complications have been pneumonia and heart failure. The effect on the death rate in Berlin has not been so marked as during the last epidemic, but it has been considerable (27 per mille as compared with an average of 18). In other parts of Germany the effect has

been more marked; thus official statistics show that the death-rate has been doubled, or nearly double, in several towns. It rose, for instance, to 44 in Posen (average 21), to 45.6 in Frankfort-on-Oder (average 23.2), in Bremen to 34.3 (average 17.1), and in Rostock to 33.5 (average 15.6).—*British Medical Journal.*

THE TEST OF A MEDICAL COLLEGE IN GOOD STANDING.—The Oregon Supreme Court has reversed the finding of the Circuit Court in the case of Barmore *vs.* the State Board of Examiners. Barmore had been refused a certificate by the board upon the ground that the Oregon State Board had adopted a rule which defined "medical institution in good standing," as used in the act, to mean "only those institutions which required three regular courses or sessions of six months each, extending over a period of three years' time," and that the school of plaintiff did not, when he graduated, have such a three years' course. The action of the State Board is sustained.

THE ANATOMICAL CONDITION FOUND IN THE BRAIN OF A PATIENT DYING OF CARBONIC-OXIDE POISONING.—A rare condition is reported by Dr. C. Cramer, in the *Centralb. f. Allgm. Path. u. Pathol. Anat.*, vol. ii., 1891, of a woman 71 years of age who suffered from the results of carbonic-oxide poisoning, the symptoms lasting for over a month. The poisoning resulted from premature closing of a stove damper, and the patient was found some hours later in an unconscious state, pulseless, and with extremely weak, feeble breathing. The unconsciousness lasted for three days. A week later the patient's mind became entirely deranged, and then she passed into a general apathetic condition, the pupils equal and reacting shortly, and a slight hyperæsthesia over the entire body. A fortnight afterwards the patient had an elevation of temperature with frequently repeated exacerbations. This continued for several days, the patient gradually sinking into a typhoid state and dying apparently from asthenia. On post-mortem examination the sinuses of the dura mater were found to be distended, and the pia mater over the convexities had lost its normal glistening appearance, and its blood-vessels were also very much distended. No marked loss or change in the substance of brain. The cortex and gray substance of the ganglia of the caudex cerebri were much redder than ordinarily, and the white substance peculiarly tough and resisting.

Miscroscopically, the tangential and supraradial layers of the cortex were clearly seen to be degenerated, resembling the condition found in senile dementia. Spread throughout the cortex were found numerous granular-like looking little bodies. The capillaries showed budding processes and the ganglionic cells were diseased. Spindle-shaped cells were sparsely scattered through the cortex, and the large vessels were for the most part normal.

Toward the center of the cortex the spindle-shaped cells were largely proliferated, and in the basal ganglia pons, and medulla a part of the blood-vessels were degenerated, and in a small spot at the floor of the aqueduct of Sylvius a proliferation of neuroglia was found.

Before the onset of the symptoms the patient had given no evidence of beginning senile dementia or general paralysis, and on this ground the author is inclined to refer the changes to the carbonic-oxide poisoning; whether it was the primary or secondary cause it is impossible to say. The case illustrates further how very prone the medullary fibers of the cortex are to degeneration from noxious or pernicious influences.

CIRCULATION—THE CONDITION OF THE CIRCULATION OF THE BLOOD IN THE BRAIN DURING AN ATTACK OF EPILEPSY.—Prof. W. S. Bechterew has recently reported some experiments on the condition of the circulation in the brain during attacks of epilepsy produced artificially in dogs, which are published in *Neurolog. Centralb.*, No. 22, 1891. The epileptic attacks were produced from irritation of the cortex cerebri by the electrical current or by the introduction into the circulation, through the femoral vein, of essence of absinthe, cinchonia, or cinchonidin. Then, after trephining, the state of the vessels were observed, these openings made over the motor areas or the occipital or laterally, in which was fitted a piece of glass so that they could be observed with the naked eye or by the use of a lens.

During the epileptic phenomena the smallest blood-vessels of the pia in the field of observation were seen to be distended, the brain substance became reddened and enlarged so that it pressed up against the glass. This distension of the brain substance passed away very gradually till the brain reached its normal condition, the blood-vessels that were most severely congested remaining the longest, and not disappearing till the animal was in a comatose condition.

These changes were more sharply marked when the epilepsy was induced by injecting irritants than when brought about by the electrical current.

The blood pressure determined in the circle of Willis and the carotid showed in the beginning of the tonic period there was ordinarily an elevation in the blood pressure in both ends of the arteries, and a strange elevation at the cerebral part as determined by the manometer (the method of Hurthle was used in determining blood pressure). This blood pressure reached its gradual height about the end of the tonic period. At the appearance of the clonic stage the blood pressure began to fall gradually, more strongly at the ends of the artery than peripherally, and at the end of the attack the pressure reached normal. Coincident with the changes in the blood pressure in the carotid were marked changes in the strength and rapidity of the heart and respiration. At the beginning of the tonic state a more or less distinct slowness and increase of strength in the heart and pulse beat was noticed. Ordinarily this condition soon gave way to a rapid and somewhat feeble pulse and heart beat. When the clonic period set in the heart again became slow and gradually got back to normal during the comatose period. The conclusions to be drawn from the respiratory changes are not so certain on account of the convulsions.

FOR FETID BREATH.—The following is recommended in the *Revue Générale de Clinique et de Thérapeutique* for the above:

℞.—Saccharin,
Acid. salicylic,
Natri bicarbonate, āā gr. xv.
Alcoholis, ʒj.
Ol. menth. pip, gtt. x. ℳ.

Sig.—A teaspoonful in a wine-glassful of warm water, to be used as a gargle once or twice daily.—*St. Louis Medical and Surgical Journal.*

MALE-FERN is not an entirely harmless remedy, though long in use, and one of the best of anthelmintics. Dr. Eich does not favor the usual method of giving the drug fasting, since when the stomach is empty the absorption of the toxic principles into the general system is facilitated and poisonous symptoms may occur. Several fatal cases of poisoning are reported. The ethereal extract contains poisons which act upon the central nervous system, a tetano-toxine or tetanus-producing body playing an important rôle. The dose of ten grains, or two and a half drachms, should not be exceeded.—*Medical Record.*

THE ANTIPYRIN HABIT.—Dr. Combernale relates in the *Bull. mêd du Nord*, No. 12, 1891, that a servant girl suffering from polyarticular rheumatism of long duration was treated with antipyrin, which she took in dose of fifteen grains daily,

and this amount was increased to thirty or forty-five grains on her day of fatigue. Without this excitant she suffered from general depression, stiffness of the fingers, and swelling of the feet. For this reason she continued to take the drug regularly for four years. At the expiration of this time she showed signs of round ulcer, with pharyngeal cough, general muscular weakness, nocturnal agitation, insomnia, and amenorrhœa. The drug was left off gradually and all these symptoms progressively disappeared.

The Influence of Pregnancy on Epilepsy.—An exhaustive article by Dr. Guder on this subject is carried through two numbers of the *Medicinish-chirurgisches Centralbl.* The author has made extended research into the data bearing on this question. This, taken conjointly with his own personal experience of such cases, enables him to draw the following conclusions: that epileptic attacks were, as a rule, absent during pregnancy, but that they were always sure to make their appearance during and after the puerperal period; that there was the fact of the off-spring of such women being predisposed to epileptic or eclamptic attacks, to be taken into consideration, For his part the author was disposed to persuade, as far as possible, epileptics from marriage and that if pregnancy did occur he was in favor of artificial abortion. He thought that an effective means of stamping out, or at any rate of preventing children being born with a predisposition to epilepsy, would be the sterilization of epileptics by castration or ligation of the tubes. As to the predisposition of epileptics to eclampsia there was still a great difference of opinion among observers in this direction. Nerlinger thought that for one thing a differential diagnosis of an attack, occurring during the puerperal state in an epileptic, was difficult to make, as to whether it was an epileptic or eclamptic seizure, and that as to the question of predisposition of epileptics to eclampsia the matter was by no means settled. And also that in young children predisposed by neurotic inheritance to epilepsy it would be a difficult matter to say whether the first attack was epilepsy or eclampsia. Fere thought that there was a close association, in predisposed neurotics, between epilepsy and eclampsia.—*Journal Nervous and Mental Diseases.*

Cancer in Relation to Insanity.—From a somewhat extended inquiry into the above subject, Dr. Herbert Snow, surgeon to the Cancer Hospital, London, concludes that:

1. "Cancerous disease among the insane is rare. Among individuals with congenital mental deficiency it seems to be almost wanting. 2. Cancer is not increasing in frequency among the insane. This fact is of no slight importance in connection with the view of cancer, as specially a disease of civilization largely caused by depressive mental emotion; and with the explanation of its greater prevalence in recent years on the ground of the increased wear and tear which nineteenth century life involves. 3. Cancer not uncommonly precedes and causes mental derangement without cerebral tumor formation. It should rank among the recognized causes of insanity."—*Journal of Mental Science.*

A Secretary of Public Health.—Senator Sherman has introduced a bill in the senate providing for the establishment of a department of public health under the charge of a medical officer, to be appointed from civil life by the president. This department shall obtain from consular officers at foreign ports all available information in regard to the sanitary condition of such ports and places, and also all information accessible from State and municipal authorities of the sanitary condition of places in the United States. All the information gathered is to be embodied in the form of a bulletin, and transmitted weekly to the marine-hospital service, collectors of customs, and to State and municipal health officers. The department shall also procure and tabulate statistics relating to marriages, births, deaths, the existence of epidemic diseases, and all information relating to climatic and other conditions affecting public health. The department is coöperative with State Boards of Health, the signal service, the medical department of the army, and other branches of the government, and utilize the results so as to make the new department a repository of public sanitary comfort.—*Chicago Medical Recorder.*

The Alvarenga Prize of the College of Physicians of Philadelphia.—The college announces that the award of the next Alvarenga prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about one hundred and eighty dollars, will be made on July 14, 1892. Essays intended for competition may be upon any subject in medicine, and must be received by the secretary of the college on or before May 1, 1892. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college.

Medicinal Qualities of Nutmegs.—The *Medical Bulletin* says: "The medicinal qualities of nutmegs are worthy of considerable attention on account of their value in the treatment of diarrhœa, many cases quickly yielding to the administration of ½ dram in milk. Insomnia may be effectually relieved by them when opium fails and chloral is not advisable. It is also a sedative in delirium tremens, and can be given with safety and marked benefit. An excellent ointment for itching and irritable hæmorrhoids is composed of two drams of powdered nutmegs, one dram of tannic acid, and one ounce of lard."—*National Druggist.*

BOOK REVIEWS.

Addresses and Essays. By G. Frank Lydston, M.D., Chicago.

This is a very acceptable reprint of some of the author's brightest and best essays merged into a convenient form. They include "The Evolution of the Local Venereal Diseases," "Tropho-neurosis as a Factor in the Phenomena of Syphilis," "The Rationale of Extension in Diseases of the Spinal Cord," "Aberrant Sexual Differentiation," "Gonorrhœa in Women," "A Plea for Early Operation in Acute Peritonitis," and "Materialism vs. Sentiment in the Study of Crimes." Lack of space forbids the review which the several papers merit, but we cannot refrain from calling attention to the last two essays. Dr. Lydston's plea for early operation in acute peritonitis is within the bounds of reason, and not a sweeping, general demand for the use of the knife. The last essay shows a wide acquaintance with the literature and pathology of crime, and is a strong plea for the study of crime and criminals from the medical standpoint. These essays abound with original thought, clearly defined ideas, and trenchant expressions of them.

Atlas of Clinical Medicine. By Byrom Bramwell, M.D., etc., Assistant Physician to the Edinburgh Royal Infirmary, etc. Volume I, Part III. Edinburgh: T. and A. Constable. University Press.

The third part of this excellent atlas has just appeared. It equals, if indeed it does not excel, the preceding two numbers. It is doing in medicine what Jonathan Hutchinson has so long, and so well, been doing in surgery.

This part deals with *Progressive Unilateral Atrophy of the Face*, with clinical investigation of the subject, with superior illustrations accompanying.

Chronic Progressive Bulbar Paralysis, with clinical investigation, and plates illustrating it, with the appearance of the tongue in that affection.

Ophthalmoplegia, with investigation and plates illustrating the condition, and also appearance after recovery.

Molluscum Fibrosum, clinical investigation and illustrative plates.

Xeroderma Pigmentosum, investigated, and illustrated with three plates.

The text of the work is much more than ordinarily satisfactory, and each part, as it appears, makes the possessor of it more anxious to have the succeeding numbers. The work is eminently useful to all practitioners, but it is especially valuable to teachers of medicine.

TRANSACTIONS OF THE FORTY-SIXTH ANNUAL MEETING OF THE OHIO STATE MEDICAL SOCIETY. Printed for the Society. Toledo. 1891.

This volume contains the cream of the contributed papers and discussions for the last annual session of the Ohio State Medical Society, held at Sandusky, in the month of June, 1891. An interesting paper on the "A. C. E. Mixture" used as an anæsthetic, instead of chloroform, was read by Dr. J. C. Reeve, of Dayton. From it and from the remarks of members, it was shown that this mixture has been a strong favorite among the surgeons of that State. One speaker, Dr. Thorne, stated that he had used it in about five thousand anæsthesias, without any fatalities. Dr. Reeve stated that he had been able to find not more than four fatalities from the use of A. C. E., after an examination of the periodical literature of the decade ending in 1890. The Presidential Address, by Dr. W. J. Conklin, of Dayton, was entitled "A Page of Medical History," and consisted of a sketch of Molière and his times. According to the study given to the question by Dr. Conklin, Molière was not inimical to the medical art in an especial manner. It is true, he said bitter things concerning the medical characters which he put upon the stage, but he did the same in respect to other types and bodies of men. Molière's genius was for satire, and it was that also which sustained him at the royal court; so that he ventured to cast his shafts of ridicule at every vulnerable or pretentious object that seemed amenable to his dramatic purposes. The foibles of Paris, under Louis XIV., have the honor of being immortalized in the comedies of the greatest dramatist of his age; medical foibles not less and not more than some others. A good phototype presentment of Dr. Conklin adorns the volume.

Of the other contents of the book, we desire to mention an article on appendicitis, by Dr. Harvey Reed, of Mansfield; one on the diagnosis of abdominal tumors, by Dr. T. A. Reamy, of Cincinnati; one on the home treatment of acute insanity, by Dr. A. B. Richardson; and one on the radical cure of hernia by the buried animal suture, by Dr. F. C. Larimore, of Mt. Vernon. The proceedings contain a set of condemnatory resolutions against the facile establishment of "mushroom" medical schools; specifying those that are formed in little towns, which have no hospitals and no adequate clinical opportunities, as being unworthy of the sanction of the profession. Another resolution, which was referred to the Committee on Ethics, mentions by name and with disfavor the so-called medical department which had recently been opened at the "National Normal University of Lebanon, Ohio." We find in the London *Medical Press* an item, interesting to the Ohio State Society, which refers to the alleged sale of medical diplomas by an enterprise called "The Medical University of Ohio," a name that is dangerously like that of an older and more reputable institution. These indications of the status of medical legislation in Ohio merit the thoughtful attention of her influential citizens.

NECROLOGY.

THE COMMITTEE ON NECROLOGY.

The attention of members of this Committee is called to the desirability of their furnishing this office with brief reports of all the deaths of members of the Association in their several States.

Death of Dr. John Cunningham in His One Hundreth Year, January 21st, 1892.

Many of the older residents of Wooster and Wayne county for the past few months have looked forward with considerable interest to the time when our oldest citizen, Dr. John Cunningham, should celebrate his one hundredth birthday, and had already made some arrangements toward holding a public celebration on Feb. 19th, when he would have rounded out the century mark in his life.

Dr. Cunningham was born in Washington county, Pa., Feb. 10th, 1792. He graduated at Washington college in his native city, and read medicine in the office of Dr. S. Murdock. Here he remained for three years, excepting the time he spent in attending the Jefferson Medical College, Philadelphia, from which institution he graduated, and was at the time of his death the oldest alumnus of that famous college. He came to Wooster and Wayne county in 1827, arriving here on the 5th day of July, having made the journey on horseback. He practiced his profession in Wooster a few months when he located in Jeromeville, which was then in Wayne county, and continued in practice at that place. On March 20th, 1830, he was wedded to Miss Maria Stibbs Beall, a daughter of Gen. Reasin Beall. Some years after his marriage he moved back to Washington, Pa., where he successfully followed his professional calling until 1848, when he came back to Wooster and again began the practice of his profession. His wife died in Washington, Pa., June 20th, 1846, of typhoid fever. Their union was blessed with four children, all of whom are living, viz.: Theodore Cunningham and Miss Libbie Cunningham, of this city; and Mrs. D. B. Olliver, of Pittsburg, and Cushman Cunningham, of Klamath, Oregon. He united with the church in early life and became a member of the Presbyterian congregation at Wooster on making this place his home and continued his relationship with the church through life. He was a man of more than ordinary intelligence, an affable, genial and kind neighbor, a Christian gentleman of sterling worth and character, blessed with those qualities of mind and heart that made his companionship and friendship, a pleasure.

He had not practiced his profession for over thirty-six years. When he came to Wooster there was but one house in the city, east of the house now occupied by Ex-Sheriff Messmore. This was a boarding house. He was always a fluent talker, and only a few months ago when on a visit to his daughter in Pittsburg, he related to a reporter that in June, 1813, himself and three companions started on a trip to the lakes. He said, "we crossed the Allegheny river on a flat and proceeded to Erie, passing through Harmony. There were only two houses in Allegheny at that time. When we arrived at Erie, Commodore Perry's fleet was at anchor. We were invited aboard the St. Lawrence, where we had a pleasant talk with the distinguished commander. The famous battle did not occur until Sept. 10th, 1813, shortly after we had left Erie. I was one of the first graduates of Jefferson College. My father, Alexander Cunningham, was a Scotch Irishman. He settled in Washington county, Pa., shortly after the Revolution. My grandfather, Thomas Scott, was a member of the first Congress, and was also the

first Prothonotary (auditor) of Washington county. He was an intimate friend of General Washington. I have four children living and seventeen grand-children."

HENRY INGERSOLL BOWDITCH, A.M., M.D., LL.D., PRESIDENT.—The venerable President of the Association in 1877 has departed these scenes of action and accomplishment at the ripe age of 84. He was a native of Salem, Mass., having been born there August 9, 1808. His father was Nathaniel Bowditch, the eminent mathematician and translator of the "Mechanique Celeste." His preparatory schooling was received at Salem and Boston, and he entered Harvard College at the age of 16. He was graduated with honors in the class of 1828, and four years later from the medical of the same institution. He studied in Paris for two years, after which time he took up his residence in Boston. He was appointed Jacksonian Professor of Clinical Medicine in the University in 1859, continuing in that office until 1867. In 1862, as Anniversary Orator of the State Medical Society, he prepared a discourse on the topographical distribution and local origin of consumption in Massachusetts. This paper has become an American classic in the libraries of sanitarians the world over, standing in many of those libraries side by side with the valuable report of Dr. George Buchanan, of the English Local Government Board; both documents having been the outcome of a laborious and an entirely independent research into the causative relation of soil-moisture to consumption. From this time forth questions of sanitation and public medicine occupied largely the time and thought of Dr. Bowditch. He added strength to the efforts that were made year after year to secure a State Board of Health for his commonwealth. Finally, in 1869, the pioneer Board was established with Dr. Bowditch at its head, a position which was occupied honorably and usefully for ten years. His labors, aided by those of enthusiastic sanitarians like Drs. Derby, Draper, Folsom, and a few lay members, tended to convince other States in the Union and the world at large that legislation on behalf of preventive medicine had become a live modern institution. Other States gradually followed the example of Massachusetts, and a wide-spread interest manifested itself in large and small communities about the necessity and value of hygienic organizations. In 1876 Dr. Bowditch delivered an important address before the International Medical Congress, held at Philadelphia, in which he sketched the progress of public hygiene and its resultant, State preventive medicine, from the standpoint of an observer looking back over the centennial period then closing. In that address he claimed that more practical work had been done among the people, during the ten years then ending, with the intention to prevent and crush out disease, and more publications illustrative of public hygiene had been given forth the world over, than since the Christian era began. He also dwelt with commendatory emphasis upon the part taken by the American Medical Association in helping forward the cause of sanitary science and in endeavoring to obtain a national health organization from the Federal Government.

In 1879, the National Board of Health was authorized by Congress, and Dr. Bowditch was one of ten medical commissioners appointed by the President. But this board did not prosper, not being liberally sustained by Congress, thus verifying the prediction made by Dr. Bowditch in 1875, when as chairman of the Section of State Medicine, he stated that the prerequisite to an efficient National Health Council must be the establishment of State Boards in all, or a large proportion, of the States of the Union. It may well be doubted whether this land will ever have its grand National Department of Health on any other basis than that insisted upon by Dr. Bowditch, namely, that it shall be a kind of central bureau constituted from a universal system of State councils; one other consideration may at some time bring a strong national body into being for the prevention of impending pestilential disease. The questions of sanitary science that most deeply interested Dr. Bowditch, in addition to consumption in its topographical relations, were the housing of the poor, lodging houses in cities, the abuse of intoxicants, the management of inebriates in asylums and otherwise, and domiciliary and personal hygiene; and these are some of the subj cts of his contributions to the annual reports of his State Board. Dr. Bowditch was a great admirer of Louis, having studied under the latter during his post-graduate course at Paris. They two became correspondents, and Bowditch translated, by authority of their author, Louis' Researches on Phthisis, the Memoirs on Clinical Instruction, and Observations on Gastro-enteritis. Dr. Bowditch gave special attention to thoracic diseases, and endeavored to revive the operation of thoracentesis for the treatment of plural effusions. He was a philanthropist in the fullest Bostonian sense of the term. He joined forces with Wendell Phillips and Garrison in the work of breaking down slavery, and he was singled out to be named "the anti-slavery fighter," a title which he afterwards said that he held to be the proudest one he could ever hold during his life. He was for several years an attending physician at the State General Hospital and the City Hospital, and was also on the consultant staff of the Carney and the New England Hospital for Women and Children. During the War he was surgeon of enrollment. He was a constant champion for the admission of women to the advantages of a thorough medical education. He was active in organized social and scientific work and an honorary member of numerous societies abroad as well as at home. It is said of him that his fondness for young people led him into their company, and to exert himself for their amusement. This was his chief relaxation, together with the meetings of the "Thursday Evening Club" of which Holmes, Longfellow and other wits and poets were members. Before the time of his death, Dr. Dowditch was spoken of as the oldest physician of Boston, and he was certainly in the front rank of the veterans, having passed more than half a century in the profession. The fineness of his feeling toward his life-work and toward his fellow workers may be judged from some words of his own—written in 1862—changed in a few points so that they may be read as applicable to himself: "He has filled with honor the sacred office of family physician. He needs no higher or sweeter eulogium; for that office worthily filled carries within itself as rare a combination of virtues possessed and of duties done as usually falls to the lot of man." Few more worthily have filled their parts, few more willing hands than his have eased their brothers' load, and none more sure of the recompense of which his friend the poet says:

> "These gracious words are welcome, our reward.
> Ye served your brothers; ye have served your Lord."

DR. DANIEL AYERS of Brooklyn, died January 18, aged 69 years. He was a graduate of Princeton and of the New York University. He settled in Brooklyn in 1845 and acquired a surgical fame and fortune therefrom in a short time. He retired after forty years of remarkable activity, and began to dispense gifts to such institutions as the Wesleyan University, the Long Island College Hospital and the Hoagland Laboratory. His benefactions to the University just named are estimated to exceed $250,000. He assisted in founding the Brooklyn City Hospital, he was associated with Dr. Louis Bauer, who went to St. Louis afterwards, in a kind of post-graduate surgical clinic which was the scene of some pioneer joint surgery in the United States. He was chosen

emeritus professor of surgical pathology in the Long Island College Hospital in 1874, and delivered courses of lectures most elaborately illustrated by specimens and artistic models, in the making of which practice had made him expert. Two sons, Drs. Morgan Ayres and Messenger Ayres succeed him.

MISCELLANY.

REPORT OF WORLD'S FAIR ENTERTAINMENT OF THE MEDICAL PROFESSION OF CHICAGO.—On January 9th, the committees appointed by the Chicago Medical Society, the Practitioners Club, the Pathological Society, the Gynæcological Society, the Medico-Legal Society, the South Side Medical Club and the Scandinavian Medical Society, all of Chicago, were called together in joint meeting at the Sherman House. These several committees had been appointed by their respective societies to consider and act in the matter of extending courtesy and hospitality on the part of the local profession to the visiting confraternity from this country and abroad, during the World's Columbian Exposition in 1893.

After a general discussion under the temporary chairmanship of Dr. A. E. Hoadley, Dr. Chas. Warrington Earle was formally and unanimously elected permanent President and Dr. Archibald Church, Secretary.

The objects to be attained were then generally discussed, and may be formulated as follows:

The opinion was common, that the profession of Chicago should extend general courtesies, and in some instances special hospitality, to members of the fraternity visiting Chicago in 1893, during the continuance of the World's Fair: That this could be fairly well done by opening and maintaining a Medical Headquarters, to be used as a point of rendezvous, as a bureau of information and as a general utility point for professional visitors, in the way of receiving mail, writing letters, leaving addresses, and otherwise as might appear necessary or expedient. In the case of distinguished members of the profession, when thought desirable by the General Committee, banquets, receptions or informal dinners might be given, under such regulations and by such means as may be hereafter fixed upon.

To these ends it was thought that the various medical organizations contributing to the formation of the General Committee should be asked to give support and to lend assistance as it might be needed, or found advisable, and that the societies should be asked to name Permanent Committees to act on the General Committee, the Chairman of such respective committees to be ex-officio permanent Vice-Presidents of the central body.

It was suggested, and generally agreed, that Secretaries familiar with the various foreign languages should be appointed to correspond with medical organizations and publications abroad, to the end that the members of the profession contemplating a visit to Chicago might be informed of the Headquarters and other medical points of interest in Chicago.

Dr. Cook moved the appointment of a committee to interview the World's Fair Officers, and request at their hands a place for a branch Headquarters on the Fair Grounds, and such other accommodations as might be needed in the carrying out of the purposes of the General Committee. The Chair appointed as such committee, Drs. Cook, Owens and Hoadley, and requested a report at the next meeting.

On motion, an adjournment for one week to Saturday 16th, at 8:00 P.M., was effected.

At the adjourned meeting of January 16th, Dr. C. W. Earle presiding, Dr. John E. Owens outlined the present status of the Medical Bureau of the Columbian Exposition, as officially organized, and the purpose of its management during the World's Fair, showing that it in no way contemplated an "exhibit" or of meeting the objects of the General Committee of Entertainment.

Dr. Cook reported that his committee had seen Director General Davis, and received the assurance of his support and encouragement that space might be secured for the needs of the General Committee, in some building on the Fair Grounds.

The report was accepted and the committee continued.

Upon motion, it was decided that the proceedings of the meetings thus far held should be printed, and reported back to each medical society by their respective representatives with the request that such or similar committees be made permanent, and authorized to proceed with the work outlined, and that, when this shall have been done, the General Committee should again meet upon proper notice.

ARCHIBALD CHURCH, M.D., Secretary.

NEW YORK COUNTY MEDICAL ASSOCIATION.—At the annual meeting of this Association, held January 18, 1892, the following officers were elected: President—S. B. Wylie McLeod, M.D.; Vice-President—William T. White, M.D.; Recording Secretary—P. Brynberg Porter, M.D.; Corresponding and Statistical Secretary—Augustus D. Ruggles, M.D.; Treasurer—John H. Hinton, M.D.; Member of the Executive Committee—Beverhout Thompson, M.D.

MR. A. M. UNGER, a student of the P. and S., Chicago, was fined $100 for practicing medicine without a license January 20, by Justice Everett. The young man admitted his guilt, paid his fine, and promised not to do so again.

OFFICIAL LIST OF CHANGES in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from January 16, 1892, to January 22, 1892.

Capt. Louis Brechemin, Asst. Surgeon U. S. A., will proceed without delay from the Presidio of San Francisco, Cal., to Vancouver Bks., Washington, and report in person to the commanding officer of that post for temporary duty.

Capt. Aaron H. Appel, Asst. Surgeon U. S. A., is relieved from duty at Ft. D. A. Russell, Wyo., and will report in person to the commanding officer, Ft. Buford, N. D., relieving First Lieut. Julian M. Cabell, Asst. Surgeon, who will then report in person for duty at Ft. D. A. Russell, Wyo.

Major Robert M. O'Reilly, Asst. Surgeon U. S. A. (Ft. Logan, Col.), is granted leave of absence for twenty-one days.

Official List of Changes in the Medical Corps of the U. S. Navy, for the Week Ending January 23, 1892.

Surgeon W. G. Farwell, detached from Naval Hospital, Norfolk, and wait orders.

P. A. Surgeon Drake, ordered to the Naval Hospital, Chelsea, Mass.

P. A. Surgeon George McC. Pickrell, detached from Naval Hospital, Chelsea, and to Naval Hospital, Norfolk.

OFFICIAL LIST OF CHANGES of Stations and Duties of Medical Officers of the U. S. Marine-Hospital Service, for the Four Weeks Ending January 16, 1892.

Surgeon Fairfax Irwin, granted leave of absence for seven days. January 13, 1892.

P. A. Surgeon H. R. Carter, to proceed to Cincinnati, O., and assume command of the Service. January 8, 1892.

P. A. Surgeon S. D. Brooks, to inspect unserviceable property at Marine-Hospital, Detroit, Mich. December 23, 1891.

P. A. Surgeon L. L. Williams, granted leave of absence for twenty days. January 12 and 13, 1892.

P. A. Surgeon W. J. Pettus, to proceed to Buffalo, N. Y., and assume command of the Service. December 21, 1891.

P. A. Surgeon G. M. Magruder, relieved from duty at Washington, D. C.; ordered to Marine-Hospital, New Orleans, La. January 8, 1892.

P. A. Surgeon T. B. Perry, to proceed to Cape Charles Quarantine for temporary duty. January 13, 1892.

DEATH.

Surgeon W. H. Long, died at Cincinnati, O., January 5, 1892.